Figure | SEQ ID NO: 1

gtctataatggcatgccacagggctctaaaactttgcagttttatcattaactcaaatgaaatgtatacatg ctttttgagatggagtttcactgttgttgtccaggctggagtacaatagcacgatcttggctcactgcaacc tctgcctcccaggttcaagcaattgtcctgcctcagcctcccaagtagctaggattacaggcatgtgccacc acacctggctaattttgtattttttaagtagagatggggtttcaccatgttggtcaggctggtctcgaactc ctgacctcaggtgatccacctgcctcagcatctcaaagtgctgggattacaggtgtgagccaccccacccgg ccatatatatatatttttgagatggagtcttactctgtcacccaggctggagtgcaatggcttgatctcggc tcattgcaacctctgcctcccatgttcagatgattctcctgcctcagcctctcaagaagctgggattacagg tgcatgccaccatgcccaactaatttttatatttcatcatggggtttcaccatgttggccagggtggtgtcg aactcctgacctcaagtgatctgcctgccttcggcctcccaaagtgctgggattaccggcatgaaccaatac gcttggcaatatttttttaagaaaaaaaatttcaggttgcaacagcatccaaaaagtaaccaatgatttta ggagtgcattggtgcaattgcgactcactgcaacctccacctcctggactçaaacgattctcctgcctcagc ctcccgagtagctgggattataggctcgcgccgccacgccccgctaatttttgtgttttttagtagagacggg tgctgggattacaggcttgagccacccggtgaaatgtaaattgttaaacctgtgtttttgaaaatgcataag tataggataagggagaattgactttctgaagaccagaacattttagtcaatttcaaacacaatgtgagtcaa ttgtataaaacaggttccttatcctgatgaggataagaatagtatccttgtcagatggaaatgcccattcag ctgtactttctagtggttacgcccatagtagcactgttgatggaaccaggtatctgactttaggaaagatgt tccccaactggagctgacccagaggagcctgaccaacttggggaaagtttaaagatctcatcacgtggagaa taggggaaggcaccaacacgtattgagtgtctactttgagcttaagggagaaggagaaaaggcagggaataa cagaacacagttatcaataatagagactcacacagagcattctacactagagctgctgtcctcttgaccaga ataagggtaaggtgtgtgtgtgtccaggaaagtaggcagctaggaggtgatcagagcatacactactgcc  $\verb|ttcactcttgttatttacttcttgccaggctttgtgttaagaattggggaaacaaggttgaataaacccagt|$  $\verb|ctgtaaagaaaaggagctcacagtctggaggggcaaattgggcattgtgcctgcaagttggcccactgagagc|\\$ ctaagaagtgaagttatgaatccaggattactcagttatcaatgaagtgattaaacatcatccatacagacc  $\verb|ttcagagctggagggaattttggatacctactcagcacatagttttcaaacagtgccttgtggaaccctagg|$ gcatttcttagggattgctgtgtgtgagagagagattgaatcagaaggtgtctgggaccattctctactca gacggagtctcgccctgtcgcccaggctggagtgcagtggcacgatctcagctcactgcaacctctgcctcc  $\verb|cgggttcaagagattctcctgcctcagcctcctgagtagctggaattataggcctatgccaccacgcccagc|\\$  ${\tt taatttttgtatttttagtagagaggggtttcaccatgttggtcaggctggtctcgaactcctgaccttgt}$ gatccaccggccttcgcctcccaaagtgctgggattacaggcattagccaccatgccccgcctatctgtatt  ${\tt atttattcattattgctatgtgaatgaacctgaagaatgcttactgttactgctaagtatttaaccacaccc}$ catgcccatgcaggatgatagtgaatagtggccaaaagatactataattagactcatgtaattaaggaatat aataagcaaagatcctatgtgctaaagattctaatattgtgctaagattttccttcagatgtttggctttct caaattccctgagggctagaactttgccctactcatttgtgttttcccaagtgtctaacgcagtgcctgacac  $\verb|tcatgcctataatcccagcactttgagagaccgaggtgggcagatcacttgaggtcaggagctcgagcccag|$  $\verb|cctggccaacatggtgaaaccccgtctctactaagaatacaaaaattagccgcgagttgtggcaggcgcctg|$  $ta at \verb|cccag| ctactcgg | a ag t cg tag t gag a at \verb|cacttgaa| cctgg gag ag t cg tag t gag ccg$ agatcagaccgctgagctccagcctgggtgacagagcaagactccatctcgaaaaataaaagtaaaataaaa taatgtactaactggacccagaacagattttccaattgattattgacaacaaaggaatctgaattatttaat tatatatactttttttcctttcttcaggtagaaacctctcctagattgtcactgaataaacattagcactaa ctatggcaatcaaatcacatattgattggtgtcagagaagaattgaacattcaactctgaagcagtgttatt tcttccatctgcaaacactctgtcccccatcchttctttgtgtatcctggaatccaagtcataaataatgat aggtatttctgtcaaaggtatttctcagaggagtgatatgtaactccctttcctctgatacactgactcact aagcagctacccttgtgaattccaattagcaatacttcttgctatgtctggtccaactttcagacaaaccta gtgttcaggattcctatagccatttataggtgtagacaggaagcattcagatatccccagaggtacctgata accagctgatccatgactgtctgtcttgggcttggccagcttgaaatcttgacattgtggttctczcccaga  $\tt gaaggtgccttttggatgtgagataaagacattatgactagatagtgcatggtgagggtgttttctagttt$ 

 $\verb|cagaaggtgatgggtaatgttcttggaagggagttgacaggcaatagctataagttaactcaggaaagcaaa| \\$  $\tt gaaaatccccaaagagctaagggagaggttagagattctgctttttattagcaattcatagctctcaagttt$ catacagtctttaaggctcccctcttcatatagaataaatgaaattattttataaattgttcctcagattcg tatctgtacattctgggaccacgagttgtagcaggatgtgattttcctcattctgggcatctaagttctaca gttaaggacactgaaacaaacctttagtcgaataaagattggcacattgtttcttctcccataaacattgaa tggtccaggaagggccaggtgtggtggctcacacctgtaatcccagcactttgggaggccaaggcaggtaga tcacccgaggtcaggagttcaagaccagcctggccaagatggtgaaaccctgtctctactaaaaatacaaaa aggaggagtggtagtcccagcttttgcatgaatgtccacattgggactttatcttaaatgtgcaagacacaa  $\verb|cttgaaccaccatacctttgcagaagtcattctagatcatcaatctgaccataaaacacagtttgccaaact|\\$ ggcaactaactgcacctatttgtgattagtttggaagaaacttgaaagtgccccttttaactgtccacttat tccctgcctgggcacggaattctctcccacgcttaataacggacacttttaaaaattatttttactccccac agagttggcagattgctgtttcagagagttaaatggaatgcctccagtggaagtatcccgttttctagaatg gaaagtctatcttcacagtgtcataatccaggtgccctgggctgagacttcccctgcctaggcggtaccctg ggtagcacagctgaactggctgtgaactaaacattcattttttattagcagccaggctggacagagatcaca cttgctctatcacccaggcaaagtgcagtggcatgatctcggctcactgcaacctccaccttctgggatcaa gcgattctcctgcctcagcctcccaagtagctgggattacaggcgcatgccaccatgcctggctaatttttt gkacttttgtatttttttttttttgagatggagtcctcgctctgtcgcccgggctggagtggcctgagcca aaaagcaaacaaaaatcacatgtggcctaataggaggccagtggaaatacacatgatgaaaaagaaacttac tgattactcatcagctacattccaagtacttctacatgtacagttatgtgacacataagatgtttaggtcac cactgacagaatgtatgatggtgaccccataagattacaaaaattcctattgcctagtgacatatgtagcaa aagtctaggacgggctgggcacagtggctcatgcctgtaatcccagtacggtgggaggccaaggccgga ttgcttgagcccagaagttcaagaccagccggggcaacatagtgagagcctgtctctacaaaaaatacaaga acaaattagccaggcatggtggcgcatgcctttggtcccagctactcaggaggctgaggcaggaggatcact cagtatgttactggtttatgtgtttactatactttttatttttagagtatactcctacttatttaaaaaga aaaaagaaagttaactgtaaaacaggcttagacaggtccttcaggaggtattccagaagaaaggcattgtta  ${\tt tcacaggagatgaaagctccatgcatgttactgcccttgaagaccttccagtgggacaagatgtgaggtgga}$ agtctatgatagtgatgatcctgaccctgtgtaggcctaggctaatatgtgtgtttttaacatattagtttt  ${\tt taacaacaaagtttaatcagttaaaacaatttttttaatagaaaaaagctcatagaataaggatatzaaaga}$ aazgacaatgttttgtttgtttgtttgttttttttgagacagagtctcgctzccatcacctgggctggag tgcagtggcacaatcttggctcagtgcaacctctgattcccaggttcaagtaattctcatgcctcaacctcc catcatattggccaggcttgtcttgaactcctgacctcaggtgatccaccctcctcggcctcccaaagtgct ttaagctaagtgttattatgaatgaatcatgtgtggtgtagtggctcatgcccgtaatcgcatcactttggg agaccgaggacggaggatagcttgagtccagagttctagaccagcctgaacaacgtggtgagacctcgtctc tacgaaaatcatcaaaaattatccatgcgtgggggtacatacctatagtcctagctactcaggagactgagg tgaggggattgcttgaactcaagaagttgaagctgcagtgagctataattgtaccactgcatttcggcctag gtgaccccgcctcaaagaataataataaaagctgggcacggtggctcacgcctgtaatcccagcactttggg aggccaaggcgggcggatcacttgaggtcaggagtttgagaccagcctggctgacatggtgagaccccgtcg ctactaaatacaaaaattagccggtcgtggtgtgtgtgcctgtaatcccagctactcaggaagctgaggt gggagaattgcttgaacctgggaggcagaggttgcagtgagccgagatagcgccactgcactccagcctgag caaaaaacaataataaataaattaagtttgaaaatttaaaatgtttataaaaattaaaaagttacagtgagcta agatttagtattaaagaatttttttataaacatgtagtgtaactctacagtgttaataaactctacagtagt cacgzctgtaatcccagcactttgggaggctgaggcaggcggatcacgagctcaggagatcgagaccatcct ggctaacacggtgaaaccccgtctctactaaaaatacaaaagattagctgggtgtggtgggggcgcctgta

gtcccagctactcgggaggctgaggcaggagaatggcatgaacccaggaggcggagcttgacagtgagctga  $\verb|ctatattcttaatgtaccttttctatgtttagatacacaaataccactgtattacaattgcctactgtattc|\\$ agtacagtaacatgctatatggttacgtagcctaggaacaataggctatattgttcctaggtatagggatgt ggtatcctataccatctaggtttgtgtaagtttattttatgatgtttgcatgacgacagagtcacctaaqqa ctcatttcttagaatatatttgtagttaagcaatgcatgactctattgactcatgaattcttaccacagacc  ${\tt tatggggcagtactattgttaccctcattttataaatgataaaactgaggtacagagacagtaaataacttg}$ accacggtcattcagctactcaagagtcaaggctgggatttaaaaccagatcacatggtttcagagtgttca cacttacctactatactgtctcaagagcaaggatgttttggttcacttgacaaatgaagatagggacctctt cctcagccctttctgagctggcctgggacagccttcctacctcactgatgccacttcctactgagcgacttt cctgcctacctcactgatgccacttcctactgagcgactttcctgggctccagacccagtaagcgactttgc ctgcacccaccttattttgctctactccctgtgctttttatgcctttaccccatctgccctggaaagctcttct aacctttgaatgggtaaaggcataaatgtatgctggagaaatcctcagctcagggccaggcacgctggctca  $\verb|cgcctgtaatcccagcactttgggaaggccgaaggtgggtagatcacctgaaggtcgggaagttggaagaccagcct|\\$ gaccaacatggagaaacccctgtctctactaaaaatacaaaattagctgggcgtgatggcacatgcctgtaa tcccacagctactcgggaggctgaggcaggagaattgcttgaacctgggaggcggaggttgcagtgagccaa aaaaaaagaaaaaaaaaaaaatcctcagctgagttgtcaactcctctttgaaactttctcagacctttcaggc tgagtcgtcgctcatttgtgcttcctcagttcctggcttctaccttcttcatagcttgtttcatgtaatgtt aattettaettgettteteeetettetaagetgagagetaetteaaageatgggtaggaeetageaeggtgt atagataattatgggcattcagagattctgtcttcaagcttatataaagaacttatttttggctctaattat cctgataattttctcattactttcacttattgtggcttgtggatcaattgttgacattttataaacatttca ctatttgacaatgatgatactaaaatacgaattaagcaaccattctaaagatagtgatgatgataacatata caggtagaacttgtgagaggatatgatttttgtttccatcttagatatgacaggaacttggaatttttgaca taaatgacgaacatccgggattcttaaacaatctttaaaaatggaatgccttaaaagctgggcgcagtggct  $\verb|cacgcttataatcccagcactttgggaggctgaggcaaatggatcacttgagttcaggagttcaagaccagc|\\$ ctggccaacatggtgaaaccccatctctactacaaatacaaatattagccgggcgtagtggcaggcgcctgt aatcccagctacttgggagcctgaggcaggggaattgcttgaacccaggaggccttggagattgcagtgagc aaaaggaatgcctttgggaataatttatttataatttatgtataacatatagacaaaccattagtttgtctt atattttactaaatataaatttagtaaatataaatatttactaaatataaaaactcttagattttactaaag agttacaactaattggcctggcgtggtggctcacacctgtaatcccagcactttaggaggcagaggtgggcc atacaaaaaattagccgggcgtggtggcaggcccctgtagtcccagctactcaggaggctgaggcaggagaa tggcgtgaactaagcagaggcttccctaaaagtgatcttcaggataaaggcagaggaagaggctccatgact gggattggtgttgaggagagccagagaagcaagctacagaaaagagaaaaaattaatatgcaagagagtaaa caacacgaaggaaaagaacccagtgtggaaacactacacgtgagaaaggtgtctgtaaggatgttctacaaa gcaaatgcttggatattaattcattgcagcaggagatggtaagcctcatgataaagaaggagaaaaaatcaa gtcaagggctctgaggtactgacccaggtatacttgactatgccagcaactgtttagggggagatttgagct ccccaggctggagtgcagtggtgtgatcttggctcactgcaagctccgcctcctgggttcaagtgattctc cagcctcagcctcccaagtaattgggactacaggcatgcaccaccatgcccagctaatttttgtacttttat ccztcccaaagcgctgagattataggcctgaaccaccgcgcctggcctaaagagatctaattcttagcaaag tttcaccagggagtctctcctcacccccaccccatccttcccacaagaattagaacaatgtccctactacc cctgctgtatctctgactttttactttaaatctcagcagaatattttactaaatgttttgatgtggttatat tgccgtgacctttaacccatttctgagtctcccctcattggacttgggtggaggggactggtaccaataaag tcaaatgcttaataatttatgcaagtgcttgaagaaatttgaagttgaatatttctatcatcttgaaatgga gaaagaatctgtaaacagcaaagccagacgccctaaaggaaaagatttacagattaaaataagattgcaatc tggtaaaaatatttgcaacacatgtaacagtcagaaagttgaaacacttggtttaacawgagcttttawcag ataaataaggaaagaataaacattggattttaaacaccgataaacatgaaaagatgtttaatctttattttt atatatatatatatatatatatatatatatagtaggcataagttaaagactgataagactgttgaaaagg

gatgaaaaactaggcttactcataccaatatatatctattaggatggctaaagtaaaaaatactgaaaatat  $\verb|caagtgctcaaaaaggatatggagcaattggaaccctcagacatcgctgrtzgagaaaacaaaatggtacagc| \\$ caccctggagaacagtttagctgtttcttgtaaagttaaacatgcgcttaccatatgactcagcaatctcac tcctgggtatttatgctaggaaaaggaaaatttatacttgcacacaaaaaacttgtaagtgaatctttatag cagctctattcataactgccaaaaactgagagaaaatgtcctttaatgtgtgaatggataaaccaactgtgc aacatccatgtaatgaaatactacttagcaataataataataatattaaaaaaccccagaaccattgatgcat aggattccatttatataacattattgaaacgacaaaattatggggacagagaatagatcagcggttgccagg tgtatcctaattatggtcatggtaacacaaatctatacatgtgtttagattcatagaactgtataccaaaag agtacacattgataccaagttttatggtgggcaattttgctataaatacggaaagtttgtctgttctattat tcagcaatcccagttttgcaaaactatgctaaagaatctttgggggccgggcacggtggttcacgcctqtaa  $\verb|tctcagcactttgggaggccgaggttggacgatcacctgaggtcaggagtttgagaccagcctggccaacatt|\\$ gggcaaccctgtctctactgaaaatacaaaaattagccgggcatggtggcgcatgcctgtagtccgagctac tcgggaggctgaggcaggagaatcacttgaacctgggaggcagaggttgtagtgaactgagatcgtgccacc aaaaactttgtgtacgtgtgcaaagagaatacaaagatgatcatggctgcattttttaaatgactataaaaa agaggtacaaccagccaggtaaagtggtgtgcacctgtagtcccagctactcgggagggtgaggtgagagga acacttgagtccaggagtttcaggccagcctgggcaacatagtgagacccctgtcccaaaaacaaaacaaaa caccaaaatgtctatctgtaggaatttgttttcaagttgtgatacataggtacagtgaaatattatacattc atttaaaatgatgataaaatctgtatttgtttacatgaaaaactgtccactataatgtagtgaaaataatag attacaaacaatatatatggaataaacttgtttagaaacaatttctagaagaaggtacaatggacagaatta tctctgggaagtgggtttataatgattctcattttcttctttgtatctttttcatagtctttctacttttgt tatgtctggacatttgattatgagcatgtattactgatctattttaaaaattgattttaatttttacaaaaa ctcatgtaaagcttgaaggttcgcattttagaccatgttaaaattttcctggatcaaaacagacttattcaa atatettgtaccetgteeteeaaaattgeetgeeaaaatacaetacaaaagagageatttagetgeatattt tttggactgctgagatcaacaatattatttaccatggcttaaatttttaccctccagtatgtgtgggttaca aacactcttccacatttttgaggcattgcttttgatattttaaatgtaaattcagctgtgcgcggtggctaa cgcctataatcccagcactttgggacgctgaggaaaggatcacttgaggtcaggagtttgagaccagtttag ccagctactcaggaggctgaggcaggagaatcacttgaacttgggagacagaggttgcagtgagccgagatc gccaggcgcagtggctcacgcctgtaatcccagcactttkggagcgccaaggtggssggatcaactgaggtt gggagttcacgaccagcctgaccaacatgcagaaacccygtctctactaaaaatacaaaattagccgggtgt ggtggtacatgcctgtaatcccagctactcgggaggctgaggcaggagaattgcttgaacccaggaggtgaa ggttgttgtgagctgagatcccgccattgcactccagcctgggcaacgagcaaaactctgtctcaaaaaaac cgaaaaaattcccccaaaaaaccaaaaaaaaacagcaacaacaaaaaatcaaataatgtaccttgtttagc attatgtcctgatagattgatggttgatttaaatataacttcttgtcaagcatctgtttttagaatcaaatt actatgactctgcagtttccttgaaatctcatagtatcacatctctgtttgcctttgcatggttttaagaaa atgaggagtgtgaaacttcaaacttcgttttcattgtattacatttttgaatgacacactggtcatttccta gaaatataaggtgacaaatatttcacagaaacataaggtgctattatctcattcaatcttaggtcactcaaa actettteteteceacacattgaagatteatttgggaatgettttgtettattgtgcacececagtgaaggg gtggtaagtgtttttcattttgcttcctttgtttatctacagggttccattcaataaacaaagggacttggg tcaaacttcaggctcttatgggtttggatgtaatcttttggtctcatttttagttaccaacagagagtgttgc ttctgacctctttgactcttccctgctgaatttactatgcctttgatacttgtgaagggtgagattttcgag tcataagcatgtgcctaaaaaaatcagatgcaaactagcaaaagtagaaactcagggtgacagtctttaaga aaagatgcaattcttgggggctgggtgggttatgcctataatcccagcatgttgggaggccaaggtgg gcagatcgcccgaggtcaggagttcgagaccagcctggccaatgtggtgaaaccctgtctctactaaaaata caaaaattagctgggcgtgctggtgggtgcctgtaatcccagctactcaggagggctgaggcaggagaattgc tggaacctgggaggtggaggttgcagtgagcctagattgcgccattgcactccagcctgggcaacaagagcg aaactctgtctcaaaaaaaaaaaaaaaaaaaaagatgcaactcttattactgacacagaaatgaaaatttag ttacatagtattgtaaaaggactatcagctaggtttagccttaccaagatttaggtaattcatttcctgcta cactcatattctcagccacttccctcatcacattttcagggtgcagtatataatagcgtcaactcgtgtaat tccccctactccccatgaacttctaggccaaggggccacacggggtggggcatatagtataaaggagtaagg

cagactgttggagaaaaacagggattaggccaggtgcggtggctcacgtgtgtaatcccagcactttaggag taaaaatacaaaaattagctgggcacggtggcaggcgcctgtaatcccagctactcaggaggctgaggcagg agaattgcttgaacctaggaggcggctggttgcagtgagccaagatcacaccactgcactccagcctgggtga aaggattagtgaggactttgcaaagtgcaaacagcatgctccatctaaagagagcttttcagtactagctga ttgttgttgtgtggaaatacgtcttgtatggtgagatcttccaccttttcaacagaaatgagaaacacaaac tttttgaggcagagttttgctctcgttgcccaggctggagtgcaatgacgtgatcttggctcgccgcaacct ctgcctcctggattcaagcgattctcctgcctcagcctcccaagtagctgagacatgtgccgccatgcctga ctcattttgtatttttagtagagacggggtttctccatgttggtcaggctggtctcgaactcctgacctcag gtgatccatctgcctaggcctctcaaagtgcagggattatgggtgtgagccactgcgcccggccctagttgg ttatttcaaacaaatactaacactcttcagcccaaaccatgtgtcagagagctgggtgtggccagtgggcc cctggtgtgcaactagtcttcagtgatgctactgtatgctagtgacagcacaactgaccactgaaaatatgg tgcacgatggtgaacagattggatttcccgtatctctagaaccccagggctttgazggcaattctgatagat ggagggggagcgagazgagagaaagaggagggagaggtatcacatgaaagagatactggactttctgctaat aaatgggtgggtatttgggtgagtagataggaaattaaaaagaaatatgagagatgggcgtggtggcttgtg cctgtaatcccagtgacttgggaggctgaggtgggagtattgtttgagaccaggagtttgagatcagtctgg gcagcatagtgagaccccgtccctaaacataaaattttaaaaaatcagzctaagcgtggtggtgcgtgcctg taatcccagctacttaggaggctgaggcaggaggatcccttgagcccaggagttagazggctgcagtgagct aaaatttgcagatcggagttttggaaaggttacatttattaaattattgttggactatgaggaacacattgt attgagcacataccatataccaggcccagtaccaagcagttcacatatattatacatctaatacccagagca actctataaggcagctctatatgttgcttccatttgaaagatgaataaactgaggtacagagatgtgaagta acatgytgatggacacccagatatkatytkcagataagaaggataagtcagaagatcagataagcagaaagg tttmmacacacaggactytcatttagtagtaaactyttatgattggtctaaaattctattttcttttacagt ttacctactcatcaaatctgtcttaactatttttgtctctccaaattctctttctgttctttkktactatgta cacatgcttttaaaatatgttaggatttgctgtttccatgtgktaatttcttgtttgcctttcttcatttat atcatttttctaaatttaaaaatagcatataaggctgggcatggtggctcacacctgtaatcccagcacttt gggaggctgaggcgggtggatcacctgaggttgggagtttgagaccagcctggccaacatggtgaaaccctg tctcaactaaaattacaaaaaaaaaagttagccgggcatggtgatgggcacctgtagtcccagctactcag gagattgaggcaggagaatcgcttgaacccgggaggtggaggttgcagtgagccgagatggggccactgcat gtaaaatacagacatatatgaaaaaattacctataatcttaccatccacaggtgattgctgttagcacctat atgaaaaaggttatcaatatagtaacagttattttttattgaatgttaaccatacacataaatatagctttg ctttttttttcaattcqcatttaccatgagcagtttctctatatcacaactctttgaaaacattattttcac ctttcatggctatataacattctatcatgtgaatttatcaatgtgtattttagaattgttatcasatgatta gagtttcgctctcgttgcccaggctggagtgcaatggtgtgatctcggttcaccacaacctcctcctcccag gttcaagcaattctcctgcctcagcctcctgagtagctgggattacaggcatgcactaccatgcctggctaa ttttgtagttttagtagagacagggtttctccatgttggtcaggctggtctcaaactcctgacctcaggtga tetgeatgeeteggeeteceaaagtgetgggattacaggeatgageeactggteetggaceaaageetettg atacattttgctaaactatcagaatgttgggcctctttgcaccctactaacaccctcagtttttatgagtat gattacattattttccctcttttccccaacctcctattctattttccttagataccttaagactgcaccccc aacttagctttctgttctcattcaggcagtgtgtccagggcttccaatcccagtggtgagtaggcagatgtg ggggetteetgttgaaetetgttaggtaattgageeaeteaaggggaaaeeagetttggggteegetetgtg gcaagcccaggactctatzgaatggagctcattcctcactaatttacacaccaggacaagtagccazgctaa gaaattgctctaatttcactggtcgtcagtcaacaaaagaatgaagatacagaaggaaaataaaaggcctgc tcccacagtggggtcatagcacatctccacatttaacctttgacaaggcaaaagtatttcttctgtccagac aattccagaagtcataaggaatactgggcaaggatgggtcaaaacaacacagactattgagggcaacaaagg aaaaaccatgcactcctgaagaaatagatcccaaaatgctgaacgagaaagaggattgtctctctagaagtc

atgtcagagaaaagaatagctcctggctaagaaatacaacagtccctcatcccagaaatcacagccaggaat tgaatctattgttacacttgataatggatctgagttgggggtaatatttgcctatcaatttggatacttaaa  $\verb| aatctctctctttttttatataccctctatctcacaactttccatttaatgagggaagtgaatttctttt| \\$ ttctgcccctctttcctactgcttctagaataaaagcataacaggacgacaggagtggagatgagaggaagc atttccaaqcaatgggaaagtatgatgagagtcgtgagttggtagaatgggggtgagtaaggggtggggtgt ggatggatggaagaggatggaggaagcaggtcatatgatcaggcttcaaaggccttccaatatcttgtt ttcagaggctttgtaggtcttcttacagaactttgagggtatttttcctttgtgagcaaaggagaaccatag tggatcatttgaggtcaggagttcgagaccagcctggccaaaatggtgaaaccccgtctctactgaaaaaac aaaaagttagttggatgtggttgcatgtgcctataactccagctactcgggcagctgaggcagcagaacttgc tggaacccgggaggcagatgttgcaatgagttgagattgtgccactgcactccagtctgggagacagagtga ggtttgcttgtttgtttttttccccaagcaaaaatcactttactgcaatagggaagacaaataggaagggg aagaaactagagacaggaacagcagtttggaggttctgcaatacagaagcccagatgtttggcttggactta gacactgggaatgaaaaataaatgatgaattaaaaaaaataattttgggaggtatacttgacctgacctt  $\verb|ggtgcttttcaaatgagaagaagatagagacagatgaaaaagttaagcaaggatgactatgatttccc|$ atagtgaatgtctggatgatgatatcattaaatgaaaatttttaaaaaaggcagatggtagaaggagatttga aggaaagacaagaaatttgttttgttttggatttacttgtagaatgacctgcaaaatttttgtcctaataaatg ttaacaagtggctttccatacaaaaaccaaaccaaacacactgatgtaaaccaaaaataaaattctgag gcccccttcaccatctgaatgaacttcctcctctgcaagggcactcttaaaatttaacatgaaagactggt tcaggtcatgacgggaagtgggggtcggacaggcctcattatgcctctctggcattaacatcaacagacc ttaagtctgttaagaagcatttacaatctattctctctgaagcctgctacctgaaggcttcctctgcacact  $\tt gagaactttggtctccacaatcctttatcttaagccagacatttcctttctattgatcccaggtctttagat$ agctgcaccccaaccaccttgggtgcatgttcttaggatctcctgagggctgtctcctgagggccaagatca ctcatatttggctcaccataaatctctaaatattttacagagttttactcttttcatcgacactgatttata caaacaaacaaaaqaqatatqcaaaaacaactcttqtgagcttgtgtgctggctccaacacaccatgctgc tggatattctaccaggcagcatagggcgcacggtgggtgagcctggcaaggagacaagagctggaggtacag ggcttaaatgaagccaagggcgtgaataatattgatgaggagagcaagtagaaatgaaaagagaaaaccagt attaggagatctataaagaaacaatagtcagaaaaagagtggttaaagaggcagaagaatcagaagagaacc ctgaatagyctaaggatttaaaagaggtcaacagcwccaccaattaagcggtttttctgagcttaagatatt tttctttatttttctatgttaaaaatattttataaagaaaaagaaaaaagagatcacatttgccccccaa cccgtccctggcctctctctctctaaggaagtcgttaatgaattttgggcagaatagattcagagctgtgaga ttttgagacggagtctcgctctgtcacccaggctggagtgcagtggcatgatcttggcttaccgcaacctct gcctcccagttcaagcaattctcttgcctcagcctcccaagtagctggaactacaggcatgcaccaccatgc atggctaaattttttttgaatttttagtagagatgagtttcaccatgttggtcaggctggtctcaaattcct gacctcaagtgatcacccgcctcaacctcccaaagtgctgggattacaggccagagccacagtgcccagcca aggctaacctcttgatcccaatgacaaacagaacaaacatcttactcaagtccagaagcaataatattttg aatcttgcttgcatgtcaacaggagccacattaatacagaagaggatcacattggtccaattaaattgaatt gattgagagcctctgcaatacacggtctactgcacaaataatgatggttcctggtacatttttatttgacca ttgattgctcgatttgtttctgtgtctaactgtgtattggaattaagctgactcaatttgaactgcaggtcc ttgcccaggctggaatgcagtgtcacaatctcggctcatcacaacctccacctccctgattcaagtgattct cctgcctcagactcccgagtagctgtgactataggtgcaaaccacczacgcccagctaatttttgtattttt agtagagacaggttttcactatgttggccaagctggtctcaaactcctaacctcaagtgatctgcccgcctt ggcctcccaaagtgctgggattataggcatgagccaccgtgccccaccaggtcttcttaatcataacaaatt 

 ${\tt agagtttctagcaaccagtatcattggtattttaaacaatgtgtacatgtacatttatgcagatgagttaacatgtaca$ atatatcaaagcaacctccaaacaatgccatttaggtaatctccaatttaaaagcctcaatagaatgataag attgagcttttctgtagttccatgacctccagcagagtctgcaaggccacagctgcctgaaggttgattctg taattagaagatgccagggtcatctcagaatagaacctcaagccacccaggctacatttacagaatcagcct ctccagaaaaacagcaacaaaggagggccttcctatgtatttggaaggagtcacctagaggagggacttggg  $\tt gttttggtgttggtggggggggagggatggggatggggagggggaagcttattgaaatatactaaaagacaa$  ${\tt accaacctaagggctggagggaagaaaattcacacttgtaagcttctttttaaggggcatctcttaggctc}$  ${\tt tagcttttgagattcagtatatatatttttgagtcttgctctgctggagtgcagtggtgttgatctgggct}$ gcctgccaccatgcccagctaattttttgtatttttagtagagacggggtttcaccctgttagccaggatgg  $\verb|tctcgatctcctgatctcatgatccgcctcggcctcccaaaatgctgggattacaggcgtgagccacc|$ gcgcccggcccagtatttttgttttatgaagatattacatttgtaaagtatgagcttggtgtcagcaaactt atatccctgtgtacaaactggccgaatcacttagccactttgggccaaatcacttagctcttctaacagtaa gaaatcaacaagaaaaataaacatttcaaacattacaatgtgttcatgtattcactgtgggggatgaccaga ttctcgaaaccacaggttgttcttagtgaaacaagtttgggttggggccatagacttgtgtatttagaatca atggctgttctctctctgggactttgatttttttttttgggctcatcccctttttgtagtatcttatctttgt cttatttgtataggacttaactgttcccattcccttattagagcaatctaagtgattaccttcatacctttt ggaattatatgcttcaaaattccaaaaagaatgattttgggctgggcacagtggctcacacctataattcca gcactttgagaggctgaggtggatcgcctgaggtcaggagtttgasrccawcctggccaacgatagtgaaac cccgtctctactaaaaaatataaaaaattagccgggcatggtggcaggtgcctgtaatctcagctactcggg aggtggaggttgcaatgagcccagatcgcaccattgcactccagcctgggcaacaaaaggtgaaactccatc agggtcasggagatctaattactctctaaaatcatgctaggaaagataacaccttttaataacactctctgc ttttataacatcattctgccaaggagctcaaaggtttcaacamagttcactttcagaaaacccctttgagga agacagaatatacatcttctctccmttttaaagatgaagaaacaggccgggcacaatggctaatgcctgtaa tcccagcactttkggaggctgaggccasargatcgcttgagctccaragtttgagaccagcctggataacat ggcaaaaccctgtctctacaaaaaaatacgaaaattagatgggtgtggtggcatgcacctgtggtcccagc  ${\tt tacttgggaggctaaggtgggaggatcgcttgagcccagggagtcaagtctacactgagccatgattggatc}$ gtggttgtcaagtttgaccccaaaacccaatttattgaccaaggttattctttgactgaggcaagggggtcc  $\verb|tcttgacacggagtcttgctctgtcactcaggctggagtgcagtggcatgatctcgactcactgtaacctct|\\$ gcctcccgggttcaagcgattctcctgcctcagcctcctgagataacaggcgctcgccaccacatctggcta gagetgeccacettggeeteccaaagtgetgggattacaggeatgagecaetgegeecageteagatecate cctttctaagggcaaacagtccatggtgcaaaggggccatgccacccagagttatgagtacctgggactcca gaatteettgeetggtggeeteeacatgeactteeagggeetgettgggeetettetatgggtetgteetga gtgttgatagaaccactgatgtgagtacctgggcttgagccgtggcctggagatcctgttgactgtagcatg gagggggcttgtgcagctgaatgtctgyatgcaggtggtgggagttctggaatatgatggagctggaggtgg gaagagaagtaggettggggeageteteteatgeeaceteattetggeeaaaaeteaggteaaaetgtgaag agtctaaatgtgaatctgcccttcaaggtggctacaaaggtatctttgtcaaggtaggagaccttgtggcct  ${\tt ccacgtgcacttccagggcctgcttgggcctcttctacgggtctgtcctgagtcttctatgzaatctgtcct}$ tcagggcagattcatatttagactcttcacagtttgacctgagttttggccagaataaggtgacatttagtt tgttggcttgatggatgacttaaatatttagacatatggtgtgtaggcctgcattcctactcttgccttttt ttttgcccctccagtgttttgggtagttttgctcccctacagccaaaggcaaacagakaagttggaggtctg gagtggctacataattttacacgactgcaattctctggctgcacttcacaaatgtatacaaactaaatacaa gtcctgtgtttttatcacagggaggctgatcaatataatgaaattaaaagggggctggtccatattgttctg aagcagtaagatgttcctctcgggtcctctgagggacctggggagctcaggctgggaatctccaaggcagta ggtcgcctatcaaaaatcaaagtccaggtttgtggggggaaaacaaaagcagcccattacccagaggactgt ccgccttcccctcaccccagcctaggcctttgaaaggaaacaaaagacaagacaaaatgattggcgtcctga aattgcggaaagcaggatttagaggaagcaaattccactggtgcccttggctgccgqqaacgtqqactaqaq 

AGTAACCTCTGCGCTCGGTGCAGCCGAATCTATAAAAGGAACTAGTCCCGGCAAAAACCCCGTAATTGCGAG CGAGAGTGAGTGGGGCCGGGACCCGCAGAGCCGAGCCGTTCTCTCCCGGGCTGCGGCAGGGCAGGGCG GGGAGCTCCGCGCACCAACAGAGCCGGTTCTCAGGGCGCTTTGCTCCTTGTTTTTTCCCCGGTTCTGTTTTC TCCCCTTCTCCGGAAGGCTTGTCAAGGGGTAGGAGAAAGAGACGCAMACACAAAAGTGGAAAACAGgtaaga tcqqqqactttqatccqqagccccacatccccaccttgcaactcagatgggaccggaggcggtgttaaat ggggagacgatgtcctagtacgagctctggtgaccccaggactctgcgctgctgcgcttgzgggcttgcccg acggtggagaccggggagcatctctgggcgtggagacccgggcgcagtaccccgggctcagaggggtcgggg gttcccggzgcgtgctgagggcgctgctgccgggtggggagagctgcaggtccggcaccgagzcgctgcttt gttcggagggccctgagctggcztagzaaacccttctggttgcaggtcggccagtacctacggagacaaatg ccagcactgagtcttcactcggttcttaagaagctggtctgttctgacctgggaattggctatatgctcccc gggactggagcggcacagtcccggactgtgaatccgggaactcgagttggaggtgtcccaaacggtccgtgg tgctattgctcactagaggccttgggtctttgztttgacctgaggggtaggggggtcctgcctacagtctcc ttettteetttaagteteggtetgtegeecaggetggagtgeaatggaacgzateteegeteaetgeaacet ccgcctcccgggttcaagcgattctcctgcctcagcctcctgagtagctgggattacaggcgcgtcaccaca tccagctaattttttgtatttttagtagagacggggtttcaacttgttggccaggctggtctcgaaccctcga cctcaggtgatccaccgzgcctcggcctccccaagtgctgggattataggcgtgagccaccgcgcggcgg agttttgtttcttttaaaaacaagacttaggagagcctgcggagacccggaggtggggtgcccaatcctccc  $\verb|tctcccacgttccctgcagccccatcttccagaccgttgctgctgctgctctctcggggcagcttctgcctgggc|$ gcagatggggaagctgggccgaggtggtgccgtggaatgaccgggagtaaccccggcggcggcgcagaact cggagctccgccgcggggctgggctctgccgtgagggtgggggtgctgggcgcgcggggctgcggtgg  ${\tt zccccggagactggccgcagzcgcctcctggccggaggacctaggaatcggccggctctactaggtgtctt}$ tgctcgcggttccgactgtgaatccggtgaagaccggtggttgcagacgggggggaactatgaggttgaggc gccattggtaaagcaggaaggttcttggggcggcggacggtgccagggttatgtgtaggtgcctctttaggt atatcttttatcaaaaagaagcaaagaaataagattaaaaataaacaaagaaaaaagttgtctggcactggc agtaattggcctgcctttgcagcactgataccattagcttttaaaatccgacttttcattgacacttcaaga agagaatgggtagtatatacacattcatctcatagtggacaaatttcatatttaaaaaaaccttctgggtac tgaaatcagcaagtcacttgccctccatggccgaatccctgcttcccacgaagagaacctcacaaaaatttc agacttaaattatgatcttcttttcaaacaaaacttaaagtccttaagttttcatctccccttttatttcaa  $\verb|cctattcttctcatacctaccacaaaaataatggaggctttctgttgagaaactttccgtttctgttgagag|\\$ tatcattctcttgagaaactttctcctaaatcagagaaagtatggaagcatggaaagtattcctgagtagaa cctctacagatattacaatatttttcaaatacaaagtttccattgtcagcctgtttcccaagtgcttccaca aaccattaaataattccacaaaccattaaaattaatgctagggaattttaggaaaacattggtttacaa  $\verb|tcagaaggaccggggaagtgggtcttcagccttcacgatgactacaagccatttaagggactagaattgcta|\\$ ctgttgtcagagcaatttaggagtctgtatttgagcacccgcatagtgttccagaatgacatatctgactgt aacctggacacgtgtgatatgttgtctcccctgcagatgagcatttgaaatctcaaccctcgtatttctacg ctggagtgcagtggcacgatatggctcactgcaacctccacctcctgggttcaagagattctcctgcctcag cctcctgagtagctgggactataggcgcacgccaccatgcctggctagtttttgcattttcagtagagacag agtttcaccatgttggccaggatggtctcgatttcctgacctcttgatccacccgcctcggcctcccaaagt gctgggattacaggcgtgaggcaccgcgcccgacccctggacacattttgacttagaacatattttcggttt ttaaagggatcttctctcccgtaagccgggatacttaagctatatatgtagtggctacaaattaaggtcttc tagatgtctagaaaatatcaaaatgcatgtggtttttgcatttctaaaatacttttaaaaccaaatactttt tcttttttttttttttctgagatggagtcttgctcttttgcctaggctggagcgcagtagaatgatcttggc tcactgcaacttccgcctctcaggttcaggtgattctcctgcctcaacctcctgagtagctgggattacagg tgcgtgccaccacacccggctagtttttgtgtttttagtagggacagggtttcaccatgttggccaggctgg tctcaagctcctgacctcaagtgatctgccagcctcagcctcccaaagtgctgggattacaggcatgagcca 

atggtcatttactctagcatcaaatgttaaaagatcattctgaacacttgttttgtttatgctgagagaagg  $\verb|cctactccaaaaaatgcaaccatcttcgtatctgcatgtggatacaaccatgaatggccaaagttattgcag| \\$  ${\tt tgttgaatagacacttatatagcactgttgtggcaagtactgtttgaaatgtttttcacgtgtttattcattg}$ tatttattttgagatagggtcttgctctgttgcacagggtggagtgcagctgcacagacaaggctcactgca actqctcctqgctaaattttttacaattttttgtaaagacaaggtctcactatcttgctcagactggtcttga  ${\tt actcctgggctcaagtgatcctcccacatcagcctcccaaagtgctgggattacaggcataagccactgtgc}$ aggtcatcaaatgctaattqaattttcacaacaaaaccatttattgtccctagtttacaagattaagtaaat ttaactccag cactaacatttcagctgctgcaaccagggagcttttcaaggatgatcaccacattctctacattcatctgctataatccttatcagaatctacagcctgtatcatattttccttgttgctgtgagtgggtcagc  $\tt gtgtgatctcaaaatgttttcctatgtgatctatagzaaaatggaatgatagagtattaggctgtaagggcc$  $\verb|tttctctgttactgctgttactgtttagaaatcaaatttagtttttcttaagatatacgtatttttggaag|$ ataaacacaqtttcaaagtctgccttgttggctgggtgcactggctcattgttgtattcccagcactttggg aggccaaagcaggaggatcacttgaggztcaggzagttzcaagaczcagzcctggcaaatatggtgaaaccccgtctctactaacaatacaaaattagctgggcgtggtggtggtgcttgtaatcccagctactgggattgg  $\tt gaggctgaagtagaagaattgcttgaacctgggaggcggaggttgcactgagtcgagatcgtgccactttac$ tccaacctgggcgacagagtgagactccgtcttgaaaaaaatgtctgccttgtaaaaagtgaaataggatga  $\tt gaaagtgcctttcttattaattggtgtaatgaattagaaataaactctttgaagacacctcttggtaaaaat$  ${\tt agttacatttactgttgatttattggtatgtttggatatgtttttaagttttccgtgtaataactcagttcatt}$  $\verb"ctcatgagtgaaataggtgctttattgtctttatagatgggaaactgaggtataggctaggtacatt"$ attatggagttcgtaagtagtggagctgaagtcgcatcccagacagtttggcttccgtgagtttaccaatct  $\verb|catggtaaagactttgtcagactatcaaagttttgacaaatgaaatattagcaaaaggccaaaagggattct|\\$  $\verb|ctattttcatttgagtatcttcacctgaaaatagttgcctgaataagtagcctgcatagaaaggtacatttt|\\$ agaa a tacttg aggccag agaa tgaa aagctta cataa aattg atttccgg tggggccttc agttactctccattctacqaaqaccacaaataqcattcaggcaaagagcatttattccaacaatggaggagcactggatttgg ttcctaaaacaaaataaagtttgaaatcctgtctttcccatgttgaaaacaaagttggtacaaaacccttta gcttttgcaaacctcctttaagacccgatttaaatgcytccctcctcatgaagctcttctggatccactcyt  $\verb|tcccatcactaagttgaaagtaagatccccttctctttacttccattagacttggattacagcactctttgt|$ agaggaaggtctttgattcattctcccctggccttaattcatcccacttaatatggaaaaaatttaataaat gctgacttgaataagtccaacaaggagaatgggaagctcatgtttgcttcctgtcttctaaaagactactta agataacagggtaatcacagaaaagcattagaaatagagttatatgagaaacaactgtagttaaggctaggt ttcagtttcgctcagtttcatttccgtttctgzaggcagctgtgatttaagaaaatgctctagtctgtggca atttagagatttaaacacttttttaaaaaacagtaacttcatatgcattggatctattcttctataaagtct tttcttggggggtgtttgtttaaaattccccggtgttttctctgccaaatccaacttccaagaagcatttgg aagtcaaaacattttatctggttagtcttaaagtccagatattttgtgatagctggtatttagtttatgata tttcccaqqaaqaactttttaqtagttgaaccatttatgaaagacttccttgaagctaccttagagagttga tttagttcttcctaaataagtaaatagaatattagtattaggacatcttggagtatagatgcaaatattggt gaaaaagaacatggatatcagagtcaaattaatgtagattggaattctggttattactaatggatatctgac attaggcaagttgctgatcactctttgcctcagtttcatcatctgtaaaataggtatttgtgttttgtgtata atgtgaaccgtataatataatgcttggcctatagtgaaatttattcatacgagtgttttcagtgattttaaa agcttgctttaggccgggcgcgatggcttctgcctataattccagcactttgggaggccaaggtgggcggat catgaggtcaggagttcgagaccagcctgaccagcatggtgaaaccccgtctctactaaaaatacaaaaatt agctgggcgtggtggtgcaagcctgtaatcccagctactcaggaggcttaggcagaagaatcgcttgaaccc aggaggcagagattgcagtgagccgagatggtgccactgcacagagcgagactccatctcaaaaaaacaaaa caaaacaaaacaaaatcttgctttatagtttacttccacatcaaattgtctttatcccatgttacttgcat tgatatcccagacatgaaaaaaaaaaaaatgataacaatgacagttattaaattaggttccactcttattc $\verb|cttcagaaraaatacacatgggctcatataatccaaattttatgtgtaattacagggtgttcatgaatgccc|$ 

acaaatccattaagccatgtgaccttggacaagtcattttacttttctgtttttaggttgttggtctgtaa aatgatactacttgacttttaaagagcccttcaagctcttatgtcctctaaccccaggtctgtattcagaag aaggggtggtcctttaattagagccatctagagatctgaggaacatgctgggcattagtgtaacataccatg tggattttgagaggtaaagaaaaaataaccagggaatgcctcagagcattcctgatcagatcgatgacagaa  ${\tt agttgagtaaacatgatttagtgagatactgttcttgcttctgactcaccatttggaaaatctctctaaaaat}$ tatgttgcccaggctggagtgcagtggcgcaatctcggctcactgcaacttccgcctcccagattcaagcag ttctcctgcctcaacctcctgagtagctgggactacaggcgtatgccaczcatgtccggctaatttttgtat ttttttaatagagacggggttttactatggtggctaggctggtctttaactcctgaccttgtgatctgccca  $\verb|ccttggcttcccagagtgctgggattacagatgtgagccacagtgcccggcctaagttttacttcttataat|\\$  $\verb|atagcatgctagtacccatcctaggaggagaattggactatacctcatgaggatagtttgaagtatctcaga|$ ggggaaggagctgctaggaagatgtttggttgtcatatccctgttcacccttgctttgcaaaattcttgtag  $\tt gatgccaggttgggagtaattgttttcacaagagtcaaaccacgcttgttttcttgaagaagcaagtcttt\\$ ggagggtggtggcttgaaatctgttggatctggtatttaggtgatacactttgacataaaggzcaacactga tgcaagcagcagctttccttggaaaggcagggagaaagtgaaggcccagactgatgagcttacactgacctg  $\verb|cagacccttctccattcccaggcatgtttggtggcagagtttaccttagttggggttaggctgttgtctggt|\\$ actgtgagagaggaaggaagaagatatgatattaacaacaacaatacatatttatatttgaaaattaaat gtggaaagtactaggtgctggacagaggtcaaaagactttttaagaatctgccaccattaatgatctctttc tgcttggcattcaaggctctttgaaataagactgtgacccactttgatagtttttgtcctggattataagaca  $\verb|catgctcgaaggaactatagctggttttctcaccagactgattaacatatagtatggtttggtacctgttaa|\\$ atgagtetetetetacaggtttteatettetaetttaagaaceeetteetggeattgtttggeteeteattg  $\verb|ttctggaatctcatgtccatctcatgtatttgccttggttcacacttgatcttctgctcatattcctcacct|\\$ actgaaattttacccatcaaccagaccgtgggtgatggaacacagcatgggctagttcttcttatatatgat ctcatttaattttcactggaactctgagataggtagcatttcagcccactcaagttgactcaaatttttgta atcatcaatatattttaaaataactttatatttgacctgtaattggaaaaccaatatgagttatcataaatg aaaggtaattttaaaaataattaggatgaagacaaattatttttctcacagtctatgtataagataaactataggetggagtgeagtggeaecaecteggeteaetgeaacetetteeteetgggtteaagegatteteetgee tcagcctccctagtagctgggattacaggtgcatgccaccacacccggctaatttttgtatttttagcagag aaagtgctagaatcacaggtgtgagccgccgcacccggccgcttactccttaatgtactaagaatgttatat ataggctgaagaagtgctgaaaagaaccatattttctcatgatgtggttcaatgtttaatactgtgcttgtt catctcctaaaatcctctgaatatcacttaaattcatcctgtgtaactctcccacatttggggaaatactga gcttgcctattattatattagccccatatttcagatgatgcacctgagccgaggagaagttaaattaacttgt tcatggttccatatttggctaatggcagagccagggattcaaactcttgtctctctgactcccaggttttgtg cttttcccacttggctgaatttctcatgctacctcctccataacacctttcctagaacttttaaggaatgct tcccctgttctctcatagcattttaatgtaagttgccaaagtgtcccagtttgcacccctaccagcaatgtg ggagaaaatagcaacatatttttgatgttggggtctagtgttacggtttcttcttctgctcttttgggatgtatat  ${\tt tccatggctactgaatacccaagtcccaaacagttttcttagactcagaaggtcatccacttcagcttcttc}$ atcaaaaagacatattttctggctgggcacggtggctcacacctgtaatcacagcactttgggaggtggagg caggagaattgcttgaacccaggaggctgaagttgcagtgagcccagatcgtgccactgccctccagcctgg gtgacagagcgaaactctgtgtcaagaaacaaaaaaaggacttgttttctgttccattacccacagtggta gaatggcgtgctaaatttattctccagctgccattaactgcaaattaaaatcttagtctcttgcctctttaa attgtgtctgtagatgtctgttcctttcagcttaaaatggacactgaaatgttaaatattggactggcctca tttatttctcctgtctgttggtccaatttgaatcttaaggcgtctttcaactggaattttttgtttctctca  ${\tt acta} a a a a t t g t t c t t t g t a a g t t t g a a t c a g a a c a a a t c t g a a t g t t g a g g g t t t c c t a a a g g c t g t t t g a g g g t t t c c t a a a g g c t g t t t g a g g g t g t t c c t a a a g g c t g t t t g a g g g t t t c c t a a a g g c t g t t t g a g g g t t t c c t a a a g g c t g t t t g a g g g t t t c c t a a a g g c t g t t t g a g g g t t t c c t a a a g g c t g t t c c t a a a g g c t g t t t c c t a a a g g c t g t t t c c t a a a g g c t g t t t c c t a a a g g c t g t t t c c t a a a g g c t g t t t c c t a a a g g c t g t t t c c t a a a g g c t g t t t c c t a a a g g c t g t t t c c t a a a g g c t g t t t c c t a a a g g c t g t t t c c t a a a g g c t g t t t c c t a a a g g c t g t t t c c t a a a g g c t g t t t c c t a a a g g c t g t t t c c t a a a g g c t g t t t c c t a a a g g c t g t t t c c t a a a g g c t g t t c c t a a a a g g c t g t t c c t a a a g c t g c t a c c t a a a c c a a a c c a a a c c a a a c c a$ ctttatgcaaaagcctgaaacccgatgttgatgttggctgcttaaaattaactgtgaatcaaggcagggttt gcctttggtcaagtattgtttattaagttgtcagtcttgttgcaggatttgcaaatttagtggaattagtgc

catttttcagtttacaattccagtcacatttcacatgatcagagcatggctttcttctctgtggagcaaata gagggctgtctgacacttggttccagtggcttccattaagcagagtggatatgtccctggagtctgcagaga agggcatggcactctgaccccagatggcactccgttttgggacattgtccaattctagttcatagcatatgt gaccaaccaccagctctcacctgatgtaaacacttagcgcgttgttgcttggggggattggattgtgtgaattt ttcaaaactacagttgacagaaggaggctaccaaaaatgaaacccaataattccatttttgggaattattcc cacttttgttccatttttcccactttgttctttggcacacagaatgtttgatttgtgaaaatcttaataaca  $\tt gtagttttttctataaggaacactcagaatcttgataatattggaataatacagatccttttgtaggatcct$ ctcagacctcatataatagagttcatgtagtcaatatttaaagaaaaacacccttaagtttttgtttttcag gagagggtttgttttggttattctaaagaaggagtttgcttgtaagttttggagggcaagacttagactctg tgtctctgtgcttgccctggaactttgattaaattgtcactaaccgagttagctggccctcgccgggctgca aggctgccgatactgtatgaactagaazctggacaagagcctggagattggataactcagtttggcgcaagt aaagggaataaaagtgttaaggtggcaaaattgtatccaggtgtttataggctccctgagttcctgacttga gcctatctatgggtttagagttcaaggctctttaccagtgctgacaatcttatactctaggttgaacctccg gggaaggtgcccttgcttgatggcatgtttaccaggggttctagagcctcaatcacagattctctctagctcacatgaagttaatgaaaatgaatgtgcttccctacaaattagagaggctttgaggaaaaatcagattaaatg cactcctgcttgaacttatgtttcttagaacacagctggaaattttgtcacacaaacctttactttcagtga  $\verb|catttcttgactggtttgttactgtagtgaatctgctttaactatcttttcttatcgctgaggttttacttc|\\$  $\verb|cattctacatgtgattgtggagcgctgcgtcattgtgggttcagtgtagtggagagtaggaagatggtgaga|\\$ cacagtagcttgttgcacattgcttaatttatcagggatcactgatgagttagtacactagagaagattgta  $\verb|tcactcttgttgtccaggctggaattcaatggcatgatctcggctcactgcaacctctgcctcccgggttca|\\$  ${\tt agtgagacttgatggtctcacttgatggtttcctggctcagcctcctgagtagctgagattacaggcaccca}$  $\verb|ctaccatgcccagctacttttttgtatttttagtggagatggggttttatcatgttgaccaggctggtctcg|$  ${\tt aacttctgacctcaggtgatcacctgcctcagcctcccaaagtgcagggattacaggcatgagccactgcgt}$  $\verb"ctzggccaaggctcagatttctaatagagatzttctaatggacatagaggctggaggaaatgggatzggaca"$  ${\tt zggazaaactgagtzczaggtgccaaazzzaacttgtagggggccgggtgcggtggctcazzcgzzccztgt}$ aatcccagcactttgggaggctgaggcgggtggatcacgaggtcaggagatcgagaccatcctggctaacac ggcgaaaccccgtctctactaaaaatacaaaaattagccgggcgtgttggcaggcggctgtcggtagtccc agctactcgggaggctgaggcaggagaatggcgtgaagccgggaggcggagcttgcagtgagccgagatcgc aaataaaaacttgtagggaggtggcagtgtgctatggaggataggtgcaacctctgtgagaatgtagagaaa atagtataagtgagtggtgaggacccccaagagggggttttatagtaaaacaatggtcagaagtggcaacag gataccgtataatgctttcacctctaccaatgcactgggtactggagagcgctccagtttgctctggaaagg ctggataaatgttttacatacattatcagttctattttttggagaagatacaggggctcagagtccctaggg ttccagagctggtgagtagcagagtcaggattcaaacccagctttctctgactctaaaacctcctttcttcc  $\verb|tgctgaaacaattaactcaagacaacaaaggagttaaggatttggggagttttctgcatggtagaatagacc|$ caaaggaaaagaaagacagtgactaagatttgggtttgtctgccccaccaaatgctttgagcactttc  $\verb|ataaatataaatccttcagg| ttgggagaagg| ttgaacatctgaagacactgattcttcagagatgtaatcca| \\$  $\tt aacaaagtgatctttggtgatatggtcactaaaccatttatcccaaaattctctttggaaaaccgtcctataa$  $\verb|cagcagggaacattatccagccaagttttctgcaaataaagggttgctgatagaggcttgcctgcttgtgt|\\$  $\verb|tgattgtgactgzaaaaaaattgattttttttttttatagacatagaatgttgaaaggttgatttcttttctaga|$  $\tt ggaaagattcttttttctatgtgctacatacccccgaccagggaaaaggcaaatagtggtattgtttgct$  $\tt gaagtcttcctttgaaggttgcttggtgtttgcttagtggaaatcagcaggggaagagggctatctctzaa$ cattttgttagazgtttcttcgtzagttctatagtgatgaaacaaggacttggggtacaggacagatctgct  $\verb|ttcagaaatcctggctcttgtgaggtttagaagccctgagaccatttagctggtggcaacgggaatgttgag|$ ggtgataaataggatctttggttgtccaagtatcagtgacatgatatagatggagttaaacctttaggatct  $\verb|ccttatttatttgtttatttttgagacagggtcttgcactgtagcccaggttggagtatggtggcatg|\\$ atcataactcactgcagcctcaaactcctgggctcaagcgatcctgctgcctcagcctcccaaggtgttagg  $\verb|attacaggcatgagccgccacacccggtcaggatctcctgtaaaattatattgttgacaacatgaagaatta|\\$  $\verb|tgcttctcaaaagctagttatagatttgtacaatattcatagatttcttgtttcagtttttacaaattcata|\\$  ${\tt gcccttattttgaaaaattagctattagcaataattttgtctaggaaattggatgtgtattcaagtgaaagaa}$ 

 $\verb|ctgcacccaag| ttactggaattaataaaattcactggatctatatattttaaacggacagtgtg|$  $\verb|atagcag| accete \verb|ctatagaatzgatagaattecetetggaatgattggataaceteeattecetetgactt|$  $\verb|ttaccttggaggatttcttaccccttttggcttctcaaatttgactattaaaatgttgcctttaaaaatagg|$  ${\tt aacacagtttcagggggagtaccagcccatgacccttctgcaaggccccctaactcaaggtagtttccctg}$ gaactgtggtttatggaatgtttcaggagtgtgaggaggtataatttaaggctgtcctagcaaggataccct  ${\tt taaggatagaggcccagtagcatctggaggccagaaaagttazaactgaggcagtcagattagcttcazgg}$ ctcaattaagctgatgggtcagcctgggagaaattgcaggatgactctcaatatcccctcccaccccacag cagccacgatctgtctgtctttaatcatgggtgcagtgaacctgttctttccaggtgtcttggccttcagta accttgttaggcttgtccctgaacgtggctaccgatccaaagacacatgatcagagaggcaattagagaaca gaccttttccaaagcaagcatgttctgttgggcttagaagtttcatgtcctaatattataggaccctgtgca tctctctggagatgaggcacatgagtcatatctgtgattcttgcttttgtgtcaacatctcatgaataggca atcagagctttggcaccaatgtattttcagttcatatctgatgtagttaaatccacctcctgctttgtagtt tactggcaagctgtttttgatataagacatctagaacactgtaaatatataacatttttatttgtctattat acctcaattacgaaaaagacatctagaagcaacctcatcaagagagatactgaggccgggcatggtagctca  $\verb|cacttgcaatcccattactttgggaggctgaggtagatcacttgaggtcaagagtttgaaaccagcct|$ ggccaacatgttgaaaccctgtctctattaaaaatacaaaaagttagctgggcttggtggtgggcacctgt aatcccagctactccggaggctgaggcaggagaatcacttgaacctgggaggcagaggttgcagtgagctga gatcacaccactgcactccaacctgggcaccagagtgagattacatctaaaaaataaaataaagtaataaaa aagagagatattgatagctgttgttggaaatttcaacttccatctcacttctggtaacttttttggaagtttg ttgaacaaagtggaatacacgcacatacacacacacatactctcttgttttgtttaaggtttaatgaaata  ${\tt gctgtcatataatcactgtttttgaaagaggagaattagttgctatctgtacatttttgggtatgtgaactat}$ gcatataagagttgttgaaaaagttatttcttgagaaaccagctctaatgctaggcaagtcacttgctttgg gggaggcctcagcttctctgtctataagattgcagcaggggtgtagtgggaatgagtcttcaacattccaag agattttatctactaatacgacagtcaaatggagcatgactttgtggaagcctctcctcttccacccagagg ggccaatttctctgtcccagtgagatgttgacacttgtatgatccctgcttggagacttccctcttctggaa  $\verb|cctgccctggctcaggcatgacggctgactgtcacccttcgataggagcccagcactaaagctcatgtgttg|\\$ gcagtgttcttgcgggaaggaaaaagaccagccagccatttgttactgcacaagcaaacagcttctggtag  $\verb|ctgtacagatacatgcactttctttcctcactgtgtttccatagacagatttagtgctgtagaagagtagag|\\$ ggcagtcacgggaaggagttcctgtttttcttttggctatgccaaatggggaaaaatcctcctatcttqtct ttttagtgtcatcctctcccccttttcttcttctttataattctcatctctctcatctctctcgqaaatgtqc atgtcaagttcaaaagggcacaatgttttggtgaggaagaggtgggagaacacgtgccaggtgctaactagg ggaaaagtaaaagtaattttataatcccagctgtcatttaagccacccztttgtgggtagcatatggtcca ctctctcagttcattgtcctaaagatgcttcatcagaaaggaataacttccaccccgttactctctgtcccc ttactctgctttatttttcttcgtcaatcctaccaccaccaccgtttgaacaacccactattatttqt ctctaaggtatggaacacacctggcatgtgataggcactcgataaatatttgttgtggctcatgggcacctt gcagagttaaggctgcagttgtttgtggaatttataagtggtaatgaatatttatctactattcctcttcca aggcgatcacacaataatcaggctttacactatccagttcttaggtcttccaagttatgacttgtgaggtat gttaattatgataatagaaggcagtttatttggttcagatttattgatgtgtaatttaccacagtaagactt cccctttacaaaagtatgatgagttttgacaaatggatacacatgtgtatctaccactgccatgctcctttt cagtctgtcgtcccctccacccatgaccactggtcaccactgcagtgatttctgtccccttcatttcacctt ttccagaatgtcatataaatggaatcatgcagtatgtagttttttgtgtctggcttatttttcttagcatta ggcttttgggattcatccaggttgtcgcatgtaacagtagcttattcctttttatggctgagtaagtgtccc agttttatttatatatttatttatgaggaggtgtctcactctgtcacccaggctggagtgcggtagcgcgat ctcagctcactgcaacctccgcctcccaggttcaagcaattctcctgcctcctgagtagctgggattacagg cacccaccgccacgcccaactaatttttatatttttagtagagatggggtttcaccatgttggccaggctga tctcaaactcttgacctcaggtgatccgcccacctctggctcccaaagtgctaggattacaggcatgagcca ctgtgcccagccccagttttatttattcaccagttgatggtcttttcgacaactaattgtttccagtttttg gctattctgtataaggcttctataaatattcacaaatacctaggatgggatgactgggtcatataatagtac tgtataaccttagcagaaactgtcaaactattttccaaagtggctcttccattttacaattccacagtgtat tgagtcccagtgtctccatacacatgctagcacttttaatatttaatttagtgggtatgtaatgatatctca ttgtggttttaatttgcatttctctgcagctaatgatgagtgtttctgcttatttgggaaggttttaattta gcagtctgttgtattctgtagatattaataacttcaaaatatcagtggcatttgcagttaaaatttccttaa aaaattggccaaaggtttccagcagtcacttctgccatgcccaaactgtatgaaacaaggctgaggtgtgga

 $\tt gattgtcacattttggcaaggagtgatccacttgggtgactgatgagacccagagagcgtacgcctcgggct$ tgagggtgaggacgggcagtcgactgcatggccctgctggccttgggaggctgcccagtccttagcta gctcagcagtcctttgtgactttcaagcatatggtagaagctgctgaacacagagctccctctttggggata atttqcccaaatcatttaatcaggcttgagaaatgagttaccacaggtccaggagtgctgccacccttgaat ggacccttttgcatactaaggaaaacagggatgaaggaaacagaaatggtctctgctctgactcagaaggta gaaatcctctttcccagccaagtcttcctagggagcacgtaggaagggctctgaacccacgtgtcagttgca  $\tt ggggaggatatcaggaaaggacattgaagaagtggagacctaagtttgagacctaggcattagccaggctag$ cagtgcttgaaaaagtgtcttaggacaagagaactcaccagtgaagtcccagtggtaggagagcgtgcagca tattctgagcctgtatacacatctccagggcattgcttagcaggtggggagtggcaagagagtaggctggag tcacagaagggaggccaggtagaccttggtgagcactggactctatgttcaggtgctgaggagctggcaaaa ggttttaagtcggggagaggcatgttcagatatttggtctagctgagtaactttgggtgctctgtgacaaat  $\verb|ggttgggagaccagttgaggttgcagttactgaggagcaggatcagagtggcctattgagtggatg|$ tgtttgttcactaacttggaaaactgatgtggaaatgtccctttggcttcagttacctgagcagaaggggcc  $\verb|gggcattgccaaactctcctcttaggacagaattgctcccagtattgatcattgtgttctgagttgggggag|$  $\verb|caaa| ttgtgcaggaggccaggtcagtgccaaggtgggtgggaggaattggcaggaagcttgcctaagtgt| \\$ gcccagcaaagccacggtagaactttctactgtggctctatgctacttcttagcaaccttctccatgtgctt cctggagagtccttggagtcagaacctttttcttgaaacccagacactttacttccaagaaaatgctgtcca agaaaactcatccttccttcttctcatgaacgttgtgtagaggtgtgtcttctctttcctttgagcttttcc  ${\tt actcagggtttaggggaggtgatattctatatttgggtttggctctgggtactgcaacactaggctattaag}$ atttcatccttactgctttgcccctcctatctttccagaaacccacaatggatttgctagaaataatggaac  $\verb|gttgaatccacagtagaacacagttgaacaccatacaaggtaagtattgtcatccttattttaccatgagga|\\$ aattgatgcttagagagcataaagccttggccaggggcacatagttgggaagccgggggctaattcatgcctg  $\verb|ggctctttctgatagttttcctttttaattgtcccctcctcattgttaccttggggatttcaagagattca|\\$ tgtagcttctaaatcaacgaactgattcctggagagcagcttctgtatgagaaaaatctagctaattattta  $\verb|tttcagtgtctctggaatgcaagctctgtcctgagccacttagaaaacaatttgggatgacaagcatgtgtc|$ tcacaatgctgctctggttgccagtgctgtgctgccagttgtcatctttgaacaaactgatgcagtgctggt ttaactcttcctctttttggagtaagaaactttggaggcctgtgtccttctagaagtttgctgagcaaatgg taaggaaaagaaataggtcctaaggcttgactatttcagagaatttcttgatttattggactgtcaatgaat  $\tt gaattggaatacatagtggtaggctgtcttttcttctcagacactgcaatttcctccaatctcttgactttt$ ctagaagttttaatccaagtccttgttgggtggtzagataaaagggtattgttctactagagactgaccttg gcatggagatctcatttggactcacagatttctagtctagcgcttggttttgtatccatacctcgctactgc ggccacagtgattcactgagccatttcataagcacagctaggagagttcatggctaccaagtgccagcaggg ccgaattttcacctgtgtgtcctcccttccatttttcatcttctgcccctccccagctttaactttaatat aactacttgggactattccagcattaaataagggtaactgctggatgggtggctgggatacacagaatgtag tatcccttgttcacgagaagaccttcttgccctagcatggcaaacagtcctccaaggaggcacctgtgacac ccaacggagtagggggggggtgttcaggttgcaggtggaacaaggccagaagtgtgcatatgtgctgacca tgggagettgtttgteggttteaeagttgatgeeetgageetgeeatageagaettgttteteeatgggatg ctgttttctttccagagacacagcgctagggttgtcctcattacctgagagccaggtgtcggtagcattttc ttggtgtttactcacactcatctaaggcacgttgtggttttccagattaggaaactgctttattgatggtgc ttttttttttttttttgagacagagtctcgctctgtcgccatgctggagtgtagtggcacaatcttggctc actgcacctccgcctgccaggttcagcgattctcctgcctcagcctcccaagtagctgggactacaggtgcc tgccaccatgcccagctaatttttgtatttttagtagagacggggtttcaccgtattggctaggatggtctc gatttcttgacctcgtgatccgcctgcctcggcctcccaaagtgctgggattataggcttgagccaccacgc ctggccgatggtgctttttatcatttgaaggactcagttgtataacccactgaaaattagtatgtaaggaag gaggcattttcttagaazaagzagaggtaggtctctgggattccagtatgccatttccatcctcagtgtttt tggccacctgagagaggtctattttcagaaatgcattcttcattcccagatgataacatctatagaactaaa atgattaggaccataacacgtagctcctagcctgctgtcggaacacctcccgagtccctctttgtgggtgaa cccagaggctgggagctggtgactcatgatccattgagaagcagtcatgatgcagagctgtgtgttggaggt ctcagctgagagggctggattagcagtcctcattggtgtattggcttttgcagcaataactgattggctgtttcc

cctcctgctttatctttcag**TTAATGACCAGCCACzGGCGTCCCTGCTGTGAGCTCTGGCCGCTGCCTTCCA**  ${\tt GGGCTCCGAGCCACACGCTGGGGGTGCTGGCTGAGGGAACATGGCTTGTTGGCCTCAGCTGAGGTTGCTGC}$ TGTGGAAGAACCTCACTTTCAGAAGAAGACAAACAgtaagcttgggtttttcagcagcgggggttctctcta agggattgatggaatctggctcttatggacacagractgtgtggtccggatatggcatgtggcttatcatagagggcagatttgcagccaggtagaaatagtagctttggtttgtgctactgcccaggcatgagttctgatccc taggacctggctccgaatcgcccctgagcaccccactttttccttttgctgcagccctgggagccacctggc tctccaaaaqcccctaatqqqcccctqtatttctgqaagctgtgggtgaagtgagttagtggccccactctt agagatcaatactgggtatcttggtgtcaatctggattctttccttcaggcctggaggaatataataactga gacttgttttatttctgcagagggttctaagccattcacttcccagatgggccaataatgctttgagtaatc tggagatcatctttaatgcgcaggtgaatggaactcttccacagagggatgtgagggctgtagagcagagtg tctaagccagtatccccacttggctgtcttaatgtagcttaacatgtctgtaatcaaaatgatcatctttct actgtctgtaaaagaacaaaagtgtcaaagcatccttttgttcactaaatttccttttttattatagtgtta cttaaatattaggaagtzaaaagtaggtataaacttczttataggctgttattatacaactatatgacccat acatatttacaaattaagtgcagccaaaattgcaaaatcaataccattcaaattaataccttaaatgtggtg aggcagctgttgttcaactgaaaccaaattataagttgcatggcagtaaatgctatcatgctgatcattttg agtttggccagtctatatztatcatgtgctaatgattgaattctccacccatttttctacttgtatgacctt aatttgatggcacctgttccatcctcatgagtttgctacaattatactggtgccaacacaatcataaacaca aatataaacttgggctttgaaatcttgtgccagaacttggctttaaagtaagcatttaaaaaatccatatgt gtttattagactttgtttagatgactgttgaaatgaaaacaaagtgtttaaaatcctcttagagaacttaaa tataatccctcagcaatatgtatacagatcttcctttgagaaaaactgattgtgttcagcctctcatgttac aaatggggaacctgaattctgaggtctctagtgagagaacagggactggaatctgtggaztcctatctgttt catgtgtgaggcactaactgattaggcattattaactagatttattccttttaaggccccgcgatgtactgt tatttccacatgttgtagctggggaacgtgctactcagagaggttaagtaacttgtctgaggtccacaccac taacaaggagcacaggtagggttcaaatccagataatctgactttggagctggcactctaactcaatgtgcc taatogottttcagtggtgtcattattttgcctattctccatctgagaatattgaagtttctgactccttcc ttattcctttgctacagtgtgatccagggctcctgccccttcttatcctggtagagggggccacttgctgg gaaattgtctccgccatggtttatccatgttgtgtgtccattagtgagtagtgggaagaatcatatcatgtt ggcaatgaaaggggggctatggctctggggtagtctagtctgaacctcttattttacggatgagaaagctga qqtacaaaqcagggaagggatttcttgaggtcacccagccagcaactgagctgcaaccagaagctgagatcc ccaqqactaqqqccqaqcctcattctqtcccatcacagtgacttttcttccctcctccaaactatttttatt ttttatttttttgcagctgcttagcagcttgaagttagaagaaagggcagggaaaaaggttttccgtgcttag ccagggaaggaatcctgcaacaggatgtggggttgggtcattcaaattgggccagactccactggtcttgtt gcttcttgcttggtattgcagatgggtttaaaagtgttaggattagagagataggcaggtttagccaaaggc aagttgttataccactgcctgctaacctgttttccttaactctcttcctgatttctaaaggaagtatatttt gctgaatcagaaagaaaagtgatttatttcaggttgctgatgcttagattgttagagttggaaagatctggc tagcaccagaaccagtctcctggtggccctacagttgcagacccttttttgctttgctctctgtgtatacta  ${\tt aagcttctatgtctctgaatctcaagttctgactggtagctactttccaatccacctggcttagatttctag}$ attatattgtttagacgtcagaacctcttaagggttttggggccacttgttagctcacatagtgagaaccag  $\verb|ccctgcccattaggtaggggaagaagttagcagtccatgatagctgttgcctgcagcgtatggatgttcatt|\\$ gcacagttcctgtctcctgagatcctggagtgtatacgcttggcctcagagcccagcacagagcctggccct tgggacatgcttagtaagtatttactgaatgagtgggaaatgtcttaaggcccattagtttgcaggtcttga ${\tt acgctatgttcagcctggagctgaatggtataccccagagcaaccctgttgaaaggcagtgcttgccttttc}$ attetgtgteetggtttgetggtaacteetgggteecetgeeteteetgtaeeeceattgtgeagaetgagg  $\verb|ggggaccatcagccagggttagttttctgttaggcaaagaataaattgaattgagttgtaaa|$ agggctggggacaggaaggggaagagaacttcagagctttcacgatcctcatctggttttaggctgatccag

 ${\tt aaactgagtctcactctattgcccaggctggagtgcagtggtatgatctcagctcgccgcaacctctgcctc}$  $\verb|ccgggatcaagcaattgtcatgcctcagcctccgggtagctgggattatgggcacacagcaccacgcctgg|$ ctaattttttgtatttttagtagagacatggttttagcatgttggccaggctggtcttgaactcctgacctca cactatttgggcattctttaatgaaaaagaatgaactatccaaaaattaaaactcctcatttatgagctttt agagaattttacagagtagatggaaactctctgcatcctttccccacttctagtttcacctgacacatttct  $\verb|tccctgtccttactcctgggccggcagcagtggtcatgattccaatcccagcttggccaccatctgcctcag|$ tggcctaggaaaactcctttctccagagctttagttttctcttctacggaatgaagaaagttaaaacaaata gacatttattgtttcatttggataaatatctattaagcatctattacttgtggtatggttagctgggtatat agtggtgaagcagctgggcatgagtactgctttcgtagagcttacagttcagtgaggccagcagatgtgaaa catatcatcacacaaataaaaatataactatcaactgtgatgaggattatgaaggaaaaaatccggcaaact atggtactggtgttagatactagcaggtgtgggtagggatttcatttagattgacaggttgtcacattaaag ctgagagccctgaagttcaagcaatggttagccaggcaaagatcagaggcttagagatagggaaatccattc caggcagagagactgggggtgcctgtcccctaggtcagggaacagaagaaagccagtggcactggtqqaqtq  $\verb|aataagactggcggggatgagttggtagtagacatgaccagatmatttagggczcaattctczctggggza|\\$ gacggagtctagttctgtcgcccaggctggagtgcagtggagcaatctcggctcactgcaacttttgcctcc tggtttcaagcgattctzcctgcctcagzcctcctagtagctgggattacagacgcccaccaccatgcccag ctaaztttttgtatttttatagagatgcggtttcaccatattggccaggctggtctgaaactcctgaccttq tgatcctcctacctcggcttcccaaagtgctgggattacaggcgtgacccacagtgccccctgagaatttaa ttttattttatgtgcaagaggattccctgaggtagtcaggccacattgtctggtgactcttgggatagaggg  ${\tt aacttgaatgacaaaggcccaagaaagcaattgtaatcattacatatacatggaccattttatgctgttttc}$  $\verb|ttcttcatttaacattatttagtgtgcgtgttcacatatttctaaatcatcttctgatttagaataatgat|$ ttctgatgtgtaggctgtgttttatagttttgaaagtaatactttgatatccattacttztcttgattctca cagcaattctgzaggtgtatgcgttgcaatttctgtttcacagatgaagagagtattgttaataagttaatg  ${\tt gccgggcatggtggctcacacctataattccagcactttgggagaccaaggtgggcggatcacttgaggcca}$ ggaatttgagaccagcctggtcaatgtggtgacacccatctctactaaaaaatacaaaaattagccaggcgtg gtagcacttgcctgtaatcccagctatttgggagggtgaggcaggagaatttgcttgaacctggcaggtgga  ${\tt aaaaaagttgctaagaggagggctgggatcttttggctccaaatctactgtgggatgatgcctttgacattcc}$  ${\tt tgatagctgtgcagtaatccattaacacagtttttataagttcaaazccctgttgccaacatttagattgtt}$  $\verb|ccatgtgtgctgttacaaataaattactataaagattctatacatttaatctttattatttttgtattatt|\\$ tctgtaggccaaaatctgaggaacaggattactaggttgaagggaaatggcccttgaagtgtctgatcagat gtctttccagaggatccaaccaatttaaatagccaccatcaatgcatgagactttgtagttcagggaaggca ggcctggttttaaaaatcatttcccctctctagcatttttctgatgtgatccttaagatttcactttagttt tcatcccagtgattatttaataaataatcacttgattaaatagtgattccttttctagttatttttgggaca tttattaaaacctggatatggtggctcatgcctgtattcccagcactttgggaggctgaggtggggggattg cttgagactaggagttcaacaccagcctgggcagcatagcaagactccatctctataaaaataaggaaatta gtcaggcatggtzggtacttgcctggagtcccagctacttqqaaqqctqaqgtaqqaqaattqcttqaqtcc aggtggtcaaggctgcagtgagctatgaccatactactgtactccagcctgggcaacagagtgaaactctgt ctgaaaaaaaaaaaaaaaaaaaaaaazzzzzzaaaaaaaagatgtgtagggagcaattttggagttat tcatttggtcatttgatatgtagttttagttttggtgctgatagagcccagaatgtaccctgaatttgatga acattotgatatatgggggggctcattgtcccccacttacctttttgcctctcagaatatcttttqatattt  $\verb|ttatctgtttttccccattgaatgttattaccttatcaagctcaaaaagtaccctatcgctattttaagt|$ tcagttgtgttaaatctataaattagcttgggaaatttggatattaaatgaactcatgaagaagcagagttt agctctccttaattctcatctttctttatttatcctactacagttctgtggttttcttttatgtaagaagca catgztttggctaagttaatgcctaggtttttttgttttatgtgtccattctcactgtggatagtattctctt  $\verb|tccccacattatattaatttaactggttttcagagactaatagcaatgctattatttaggagaatttacct|$ tggttctgattaacttacccatacttgcaaatcatttgcagctttttagttaactttgtgagttctcttaga tttacgaccatgccagaaacagaaaggatattttcatctcttcctttctgatgtttattcttcttgtttcct ttttttatcccccattatattctcaagaatctctcaatactaagaaatagcgacttcatttttcagcgzcgg agtgcattattttggctaccatgattcagaagcctcttgcctaaggcccaattttattctgctagttttctc tgttctttgtacatggcccttgcgctgccctaaccttgaattaacgtggctaaatctcaagaatttaagagc accgtgactgtgtcctcaggctagggagggaaatgggttcacagagtgactggattgtggtctatgaacttc ggcagccagcagcaaaagtcaggcatgaataatcaagtggacagtgaacatctgtagtgtgggagatgttgg cataactatgaatgattcaagagtggtttgatgcatattgaataacatgatgataagtactagactctg

tgctaagccttctatgtgaaatacatttaattctcataataactctagagcagtggttctcgaccggggccg gttatccccctaccccacccctcacccttccaccagggacataacatctggagatattttttggttgtc  ${\tt acaatcctgggaatgtatgtgctgatatttagaggttgaggtcagggatgctgctgcaacttcgtagaattca}$ taggagagtctctcacaacacctatctggccccaaatgtcagtagggtcactatcaagaaaatctgctctag  $\verb|cagtgcctgctcatattatccccatgttgaaatagcaagatgggaagtgcaaagtggtgcttcggtactctt|\\$ qqaqcaqctttqactttggtgagaaacgccttttaaaaacaatgtttcttcccatcttcccaccccatgggg aggtqtqqqqttqqqttgqgtaggcaccaaagcaagatttagaagagttttctgtaggaatttataatggtaa aggatcaacttcatttccaagctatttatgagggtttatgtttaggaaaagtgctaagcttagagaaggagg  $agaa at \verb|ctgattttatta| ta at \verb|gagtgtag| ccata at \verb|ggcatatcctgg| caga agt \verb|caactttgg| tt ctagag$  $\tt ggaggctattatgaaaagaaatacctggaacattcccctgggtttggaaggtgagttctaggttcaatgatg$ qqaaqaattttaqaqqtccaagataaaagggcaaagattaaattttgtctctcatgagttctctggctcagg tggtgtgaactttgcagacagtctctttaattcactcatacatgctagtctcccagctcagcaagggctttg agagagcaggtgtctgtatgctctggtaagtgaaggcaaagtgcataaggaggttggggtccataatggcga agagaaggagcccttcagtcagagtggctttgaatcttggctctgccatttgccaatcttggaccattgggc aqtqtattaactctttqaatctcaqcttcctcttctqtaaaatgtqtataacaagagtactaattggattgt ttgatgattaaatgagttaatgtgtataaagcactcacaaccctggtacatagtaagacctttcattattat tatcatcatcaatttttttttaacctcttttcctgatctgcttacactcaccagcttcagctgctccaaatgg caacatattttgagcatctgctgccctacaggatcctagatatgggggctgcagagatatccaggaacataa  $\tt gccttgattaattgggtcagatcagtgctcagcagggctggcaagtgctaggtttcttttaagtggcatatc$  $\verb|ttaaaaggtatatgtcctz| a a a catagctttgtgatggcagcatgatgggtacaaaagcacacattaagtg|$ tcagtagatctgggttcaaacattggtgcagtttcttatggctcgtaacttgttcaaacctcagtttcttca cttctaaaacggtaatgatacaacctacctcacagggttattatgaattaaatactggagatgagatacaca aaacgtcttgagztacacagtagctgcccaatattggctgtaagtattataaatctacaagctgtgaattaa ttttacctctctggatcctgzttgatatttctagaccattccacctagtggggccatttcctacctgagtca  $\verb|cccgtggtgtcaaatagaatgtcatgtggcctcctgagttgggtagaattggctgctcatctcaaccccgct|$ actgactatctctgtgatttacccttcctccagccttagccttgctacatataaaatcaagacaataatgtt  $\verb|cctaaataaacagtagctactatttatccttaaagtacaaatggtagtttcagagcttcaaggctgatggct|$ tttttttttttttttttttttttttttgaggtgaagtctcactctgttgcccaggctggagtgcaatggag cgatcttggctcaccccaacctctgtctcctgggttcaaacagttctcctgcctcagcctcccgagtagctg gaccaggetggtettgaacteetgaceteatgateaaceeaceteageeteeeaaagtgetgggattacagg tqtqaqccaccacqcccqqcctcataagtattttctaaatttatttacagtcatgccatttaaaaggaaagt tgtattcctgtctttgttaatatttataagtgattttattcagctacaagcttggaatggcatataattttg tattctgcttttttcacttaatattacatggctaatgatttctgtgtttcataaacattattctgatgatgg catgatatattgttgagtacatgtaccataattgaatcatttccctattgctatgcaattaagttgtttcca atattttgcaattataatgtttcaatgaatgaataactttatgcatatagctttttgatatcttaagttcag tttcctaggatgaatttccaggaatagtaattgggcaaatgggataaacatgactcttgaatacgtattgtt aacattgctttcccaaagggctcaactgatttatatttccgtgttcattatcttttaaaccagctcatttac  $\verb|tcaccaaacatttttaaaagccattatcatgtggtaggcttagtaagaagaaagtgaccctaagggagaagct|$ tatatataaatagggtccctggtgtaccaagtgctgatacagacacaaagtacctggggaaattgagatgag ttgctttcttccccacccccacccccagctttattgaggtataattgacaaataaaaattgtatatctttaa gatatgcaatgtgatatatatgtatatctcaacttaaaaaataagctacagaataaaaaggtgtttgctatt aaaaaaaaaagaaaaggctgaatgtcattcccaagcttggaaattttgagtatgttgcctcttttgggattattt acagaaatattagcaagaccagcccatctttggtcttgagtactccactgtcagcatgctttcttccagag agggatccatttgcctttatttttcattctgttgtgccgtctatgcaaactattcttgatagttttatggta acagtgtttttttgttccatgagatzaatttatacatgctcattgtggaaaatttagaaaagacaggaaagt caggccggagtgcagtggcgtgatctcagctcacagcaacctccgcttcccaggtttaagtgattctcctgc ctcagcctcccaagtagctgggagtacaggcatgcaccaccacgcccggctaattttgtatttttagtagag atggggtttcaccatgttggccaggctggtctcaaactcctgacctcaggtgatccgccttggcctcg ctgtcattatcttgctgtatttccttctgcccagtctcactctgatcatgcagtggcgtgatcatgcagtga tctcggctcactgcaacctaggccttctgggttcgagtgattctcctgccttagcctcctgggttcaagtga

 $\verb|ttctcttgccttggcctcccaagtagctgggattacaggcatacacccccatgcccatctaatttttgtatt|\\$ tttagtagacacagcgtttcactaaaattttgtatttttagtagagatggggtttcaccatgttggccaggc tggtctccaactcctgacctcaggtgatccgcctgccttggcctcacaaagtgattacaggcatgagccact gcatccatcgccaaaaagattttttaaaagagtttaatgtagaaccatatcaaaggtctttggaaataaaaa gcacgaqcacctagcagaaaggttcaattatgatctattcatagagtggaatatcaagtagacattacagga catqttttaagattatattttatgtcatgggaaatgctctcccagtatgatgttaaatgaaaaaacagaata aaaagatgttaacagagatccattgttacttcagtttactagggattgtctctgggaggtaggattaaggtg  $\verb|ctaggggagaggatcacttgaacccaagagtttgacgttccagtgagctatgatctccggatcgtaccgcct|\\$  $\tt gtctctctgttgccccagctggagtacagtggcacaatctcagctcaccgcaacctctgcctcctgggtt$ tttgtattttcagtagagacagggtttcaccatgttggccaggctggtctcgaattcctgacctcagctgat  $\verb|ccaccggccttggcctcccaaagtgctgggattacaggcatgagccactgtgcccagcccaatcttttgctt|\\$ tttttaaaaaaagaagacaaaaagggattttataccagtattatcttggctgtgtgactctgaagccacagt  ${\tt tgtaagttataattactctgaaacacaaggccctgtgactcttttgggctcttttggtgtttatcttgattac}$  ${\tt aacgttggaatatagaaatgaaatggaatggagaggtgatagacttcaggcagtgtaactagttgtctgaactggaatgga$ actactggctcaattatattgtgtctagtgatttccatcttgtccgtctgctaatttatcgcctggtaactc actgaggcagggttttcctttggagaaacctcattgttttaaccagtgtatcatgcttgtttagaagttcaa ttacaqtcctgagtgcacacaggtcaatatggaactatgtgtgaattttcattgtctttgagagccctcttc  $\verb|tctgccccatagggagcagctttgtgtgcaattagaggagcaagggttgtgtgtatttagcacagcaggttg|$  $\verb|ggtgcctgctttcagagtgctcaatgtgctgaggaagccagcaacagaaacagatgatttcaggagctccag|\\$ gaaaatgctacaggaggagtgtgcctgggttactggagtagcacaggaggagggcttctagctcaggctgag  $\tt ggaag catcttcccttacctaag ggaag acacag agg tatatggaatgg tatgttaaaagg ttgggactcca$ a a cagt to tg tta a agct tag agag tg g tg g g aga c tg g aga ag t tg a tta a tta g ta a a tg a ag t tg t ctgtggatttcccagatcccagtggcattggatatccatattatttttaaatttacagtgttctatcttattt CCCactcaqTGTCAGCTGCTGGAAGTGGCCTGGCCTCTATTTATCTTCCTGATCCTGATCTCTGTTCGG CTGAGCTACCCACCCTATGAACAACATGAATgtaagtaactgtggatgttgcctgagactcaccaatggcag ggaaaatccaggcaattaacgtgggctaaattggacttttccaaagatgctgtctttgggaaacatcacaca tgctttggatcagzaaaacctaggcttctaatttgttgataaggcatgaactcaggagactgttttcagtcc tagtgaatggtgataattgtaattataacagtagacaacatctcttttacacattttaaatcatgaaaatag aataaccttactgataattttagaaagtggtgattaaaagcacatttaagataatgccttaacacctagtct tttccatatgcatgatgtcttaatcacacattgcaaatcatggaacacagaattttaagcagcatttgtgta gaacttctcagttttactaatattattttattttattctcataacaaccttgaatagaactcagatcatctg tcaatcatgtattttgataacagcctttacagtgagcatagaaaatacagtagtggctaacaacacaggctc cagatgtcaggttatctgggtatgaattctggtgtcagcattcactaagcatatgaccttggacaagtgatt taagtttcttttaaacagagaatagtaatacctacctcatattattattgtcagtgtatcatcttacaatca cagtctttctcttagggctgggctcagtgggttggattgacactgcagaaatggccagatctaaaggatcaac atttacgtagctgggaaatgtagctgggacttcagtttcactgccctagtgatttttcctaccactaagcag ctcagtccatacccctacgagacccacaagcttatgagatactgttcttccaggaaagcagtggggccaggg  $\verb|ccaccttttaattgtgtttcttggcctggtcccatctttctcacaatatatagcaacagttatttacttgct|\\$ aagaaacattttctgagacgtgatttcctgatttcatcaaaaaagaaaagagcgggccaggcacagtgggaa gtcaaggtgggtggatcacttgaggtcaggagtttgaaaccagcctggccaacacggtggaacctcgtctct actaaaaatacaaaattagccaggcgtggtggcgcacacctgtaatcccagctactggggaggctgaggca ggagaattgcttcaacctgcgaggctgaggttgcagtgagccgagattgcgccattgcactccagcctgggc tttagattttatttaagcattatgccaagcaccactgaagtataagtttcaagggcaaactcagtttttca  $\verb|tctactagacgaatgatttctggaatgattacaagcaggcaazgatggtgzztagtggaaatagcaaatgt|$ cttcggcatcagacaagttggggtttgtttgtatcctgcctctgcccttcaccgaggttgtgatcttgggca gattgttgagttttaacctagattcctctgactccagatcataaattttcagaaaagttctgaaattcttgt gctctgttgcccagactggagtgcagtagtgcaatctccgctcactacaatgtctgcctcccaggttccagt gagcctcctgcctcagcctcccaaatagctgagactacaggcatgtgccaccacgtccggctaatttttgta  $\verb|ttttagtagagacagggttttgccatgttgaccacactggtctcgaactcctggcctcaggtgattcgccc|$ gcctcagcctcccaaagtgctgggattacaggcatgagccaccatgcccggccatatccatgcacttcttgc aaccttaccttcttttctcatcaccctccagggacctagttggaagagcagagttaaaagttaaggtgaaac ttggagaggtgtcttgtccctaggaacaaaggactggtttgaaattctctgtaaatcttccccagttcaaac cagagttatcaaggtcttaaaaacttccctgggtcctgagagcccattatattatttacttgtcttcctgta  ${\tt tgccacccctgctaagggataacctgaaataccttcaccatcactgccctgtgctgcttttcacctatgcca}$  $\tt gttacataaatctccctgaatgaagagcagctgacttaggcaaggggccttgtttggttttccttgaactat$ taacaggaagatagggagattaactgtgtaaatgttcaataggccagagtccctgcagagggtggccacagt accctatattgaaatgcaaagtgcagcaagtcctgactttggattaacttctcagcccatttgcatgaaaat tgggcaacagcagagtaagtgctggggtagattcactcccacagtgcctggaaaatcctcataggctcattt gttgagtctttgtcctacaccaggcactctgcaaaaacgctttgcctgcaaggtctcatgcgatgctcacca cagctctgtgaagttaattgtacttttatcaccattttacagatgagaaaactgagggtatggggtcaatga  $\verb|cttggctaaagtcactgcttagcaagctgcagggactggatgtgaattccaattggtttgactccaaagcct|\\$ gtgaagctacttgttcttcaccacctagagctgtggttcttgataactgtgaactctttttggggtcacaaat  ${\tt agccctgagaatatgatagaagcaggagctctggcctttctgtccatacctgaacaggtccttgggttaaga}$ gcccctcgtccagggcctattaatcttgatcctcataagcagcatccatgtattacggccgcaaaccaaact gtgccagaccgaatcctaggaccaagcccaaatatgtcccatcatccttttggtaagaagctcattgtaaga aagaaagaggaggagcaagaggatgacctagtgcatggggcctcattgttttaattagtgacaaaacaacaat $\tt aataacaacaacaccccg aagcttcacagatgacatcagaccccaagcctgtgtgtttttcaggtgccctt$ gaggagetttgtagetggcagaggaggtgaaactgacaaatgtttggcagatggaggagagtaccagagggg  $\verb|tttgagatgagctaaattccaatctaaccgcaggtgtgaggaagaggcttggattggaccatggagatggg|$  $\verb|tttattttttgaaatggagtttcgctcttgtcgcccaggctggagtgaaatggcgcgatcttggctcact|\\$ gcaacctccccctcctgagttcaagcgattctcctgcctcagcctccagagtacctgggattacaggcgcct  $\tt gccaccaagcccatcgaatttttgtatgcttagtagagacagggtttcgccatgttggccagggtggtcttg$ aactcctgacctcaggtgatccgcccaccttggcctcccaaagtgctgggattacaggcgcgagccactgtg  $\verb|cccagcccacttcatcttaccgtagttacctccttagagtatgaaaaaataggcttagggcatccccaagtc|$  $\verb|ccctctatgtctgagagctgaggctgtcaaagaggaactaaggatgccagggactttctgcttaggac| \\$  $\verb|ccctctcatcacttctccaacgctggtatcatgaaccccattctacagatgatgtccactagattaagaatg|$ gcatgtgaggccaagtttccacctgagagtcagttttattcagaagacaggtctctgggatgtggggaat gggacggacagacttggcatgaagcattgtataaatggagcctcaaaatcgcttcagggaattaatgtttct  $\verb|ccctgtgttttctactcctcgatttcaacag| \textbf{GCCATTTTCCAAATAAAGCCATGCCCTCTGCAGGAACACT}|$  ${\tt TCCTTGGGTTCAGGGGGATTATCTGTAATGCCAACAACCCCTGTTTCCGTTACCCGACTCCTGGGGAGGCTCC}$ CGGAGTTGTTGGAAACTTTAACAAATCCAT gtaagtatcagatcaggttttctttccaaacttgtcagttaa $\verb|gcttgtgtgatagagtctgcagaatgagggaagggagaattttggagaattttggggtatttggggtatccat|\\$ ggctggcacaaagatgcatgctggaagggtccttgcccataagaagctgacagccaaggctaggggagttct gtcttctctgcatcaggtcacctctctcacctctgtcactgccccatcagactacaatgtctgcaggtcttt ctcccctgagtgtgagctccctgagcaaagcaggatgctgccccttccctttgtattcctggctcctggctt cagtgcctggacataagtatgggcataataagtgtcccccaaatgagacattgaggattcttcaaatgcaca ggaccgtgatgtgagttaggacggagtaaggacgatgggatgtggctcaggacaatcctgaggaagctgcag  $\verb|ctgcggcacgcagggccacactgtcatgttcatggaccctagactggctttgtagcctccatgggccccttc|\\$ tgcccttaagagtatcccaggcccaggccactgagcctactgtggttcatggataagzttggccctgggggc atgtgtgtgcatgcatgtgtgcacatgcatgatgagccgggccttgaagggtggtaagatttgggtgtgt  gtgtggggagccatgggagtgggttagggccagcctgtggaggacctgggagccaggctgagttctatgcac ttggcaqtcacttctgtaaagcagcagaggcaqttggcctaqctaaagcctttcgccttttcttgcaccctt tacaqTGTGGCTCGCCTGTTCTCAGATGCTCGGAGGCTTCTTTTATACAGCCAGAAAGACACCAGCATGAAG GACATGCGCAAAGTTCTGAGAACATTACAGCAGATCAAGAAATCCAGCTCAAgtaagtaaaaaccttctctg catccgtttataattggaaattgacctgcaccagggaaagagagtagcccaggtgtctggggcttgttccca ttagatetteeceaaggggttttteteettggtggetggeetgtggggeeeeteteeaggaggeattggtga agaaactaggggagctggttgccacagacagtgatgtactaatcttctctgggaagacagaagaaaagtccc cagggaagaatactacagacttggccttagggacagctaggggtgcagattgctgccaactgcattttttct gaagttggccatatggttgcagtgaatggatttatagacagagtatttctgtgcatataagagcaattacag atcatttcaattagtctgaztgggcatttgaacttgttgtctttaaaaagtgaaatctttacctctgatctg ttggctgccatagcatcagagcagccttccaggcagtggcctggcaaggggacagaggctggtgggagcagc tqqctqaqtqcaqccaqtaatqqcatqtqcatqqtctgtaqaqaatqtaqaaqcaataatqaaqccqataaa agctqqtctqcattttattattatcatgcgccggtggttctaaacaatgtcagtgataaattactcctccc gttggctggcctttgctgaaaggcctaccagtttgttttctatttggcaaaagaagaatgataaagttyta ctttccttgggcagtaaaagaggcaatgggcaatgtgggacctgatzgacaazagggaazzzgzzzzczzaz zzazzzazzgetgtettaggggtggeatggagggggtgetgetteaeageagagaggtatggetgtgett ggagtgtccacttagacaactcctggctgtgcagccaggccatcgagatgctgtttccttgacctgcaggtc ctggtcttgcacatggatgtttcttctggtgcaggagacagaaaggtagcaacaacccctgatcaaagcctc agtccttccttatttactggagagcccctgctgattgaccagaggcacagctggggatatttcctttacctc tgtagcaagagacagcgtggtgcagaggaaagtgctagcatacattaccctgtggctgcatgactttgtgaa taggttagttagcaccctttcagccacttcttcttacctgttaatgagataaaacatgtaattgcttaaaaa aagccatttaacccctcagccttzactttcctcaactataaaatagcagctaacttgaaatgtaaactataa gcatttctgagcacctggccttgttcttctgccttgcaatttatgcagcagttgaaatagactggctgatgg gggtaagttgtcaagcagactttctgatcttagtggaggagactgccttaaaacaacactaatttccttttt cttttcttttcttttcttttaagacagagcctcgctctgtcaccaggctggagtgcagtggcgcagtcttgg ctcactgcagcctctgcctcctgggttcaagcgattctcctgcctcagcctcctgagtagctgggactatag gcatgctccaccatgcccaactaatttttgtatttttagtagtagatgagatttcaccatgttggccaggatg gtctcgatctcctaacctcgtgatctgcccgcctaggccttccaaagtgctgggattacaggcatgagccac catgcctggccttctttgagaagctggagacatgagttaagtggtgaagaagccaaatctgtatctaaaaaac cctacagtagtgtgcagagctctgaggagagaggtcccttagatttttgagtgtattattatgtcagtgctt tttgcttgtcttgcagcacaaaacaggcttcagtatagggggaaatgcacagaaacactgccttttcctaca ttttttttttagagacagggtctctttctgttacccaggctagagtgcagtggtgcccttagagctcactga geteactqeaqeeteqaatteetgggeteaagtgateeteetgeettageeteeegaagggetgggatgaea qqcatqaqccactqcacctqqccaactttttqctqattqcqaataqcactcttqtcaatttcqqaqagaagc tgagactqqcatatqtcagtatqgatccccacttagagacctqtgtttatctqcactgacaccccatcacag catgatgagcttggccctcctgtgctgtctctcccagggctgggaggatccttgaagctgatctggttttgga getttgteeteatteaeeteetttaceaeacaeecaeetteeeagggeggggatetaeeaeteaetaagtag cccattctqqqtqttqacaqctctaattqttaqaaaatattcaccaccctqttatgctttctaqagaacaag gttgtgtttcagtatgtctgtgtgcttcttgaagtttactggaaattatgaaagtattctggcacagaggag gaaqqqatttttqcctcccttgttctgagtgctacatttccgttaatgcagtctgagattgtattaggcatt cagaattgcaagttacgtgttctccatttctttgttgtattgttggctttttgaactaaagggaaaaatgtc tttttttctgttttacatgtttagattccctatgctatcctatcctcccaaaaccattttagattctgatttt gccatgtattatatctgatactcctttctcgtcatctagagatgtgataaacaactctcttttggcctcattc cagtcatcgataactgtgggacaaagacttgaagcttggatcagtccagtggagactaaccacccctgtaga  $\verb|cccttttttcctcaactataaaatagcagctaacttgaaatgtaaactataaaacctaatgtagtatctggc|$  $a \verb|catag| taga t \verb|cccaataaatg| taga t \verb|cctaagacagtg| taga t \verb|gcatttctg| taga t aga t a$ 

tgttcttctgccttgcaatttatgcagcagttgaaatagactggctgatgggggtaagttgtcaagcagact  $\verb|tttttaagacagagcctcgctctgtczaccaggctggagtgcagtggcgcaatcttggctcactgcagcct|\\$  $\verb|ctgcctcctgggttcaagtgattcttgattctgtagacactaccactcaggcctatattgtaatcagtgctg|$  $\tt ggccactgggctcctgcttctgtgatccagttgggaagtttatcttgttcttcccttcagcttgcatctgct$  ${\tt tagttgattctgtcattcaacccttatatattgagcgtctcctatatgcgaatcactgttctaagtgccgag}$  ${\tt acacagaggtgtccaaaacaaatatggcccctctccatatggaatttctattctagagaagaatctgaccca}$  $\tt gaagggggaagtgactgtcccaagtctacacaaccacagaagggatattctgggaataaatcacggctaaac$  $\verb|cccctgctgctccaggcagttctccttctacagtgctctattgtgctgttttaataatctttcaactggga|$ agaactcccatttcaggaattaagccgtggacaaatcttttaattatccttgaaatcatcctaataagaaat  $\verb|cca| aggaggaagtctta| cagggtgcctca| cca| ccttttctcatca| cctggaactttttagacattttattatt|$  ${\tt agtgtgagaagcattcattcatcttaaatacctatggtgactgcaactcagatgtaaaaattggataaatcc}$ t caga a accetagg gaa agt gac at gtct gtatttt gtctct gt gaga tacagac t gg caga gata agt gtt $\verb|tctctgggtgagttttgtgtggtatctgggatgattttaggcagtacgtggatgagaacttttaattttaac|$ ccacatccaattgcaatttcatggaaattattgcttaggaggatgttcaacaggaaaaatataattaaagtt  $\verb|aattcaa| aagaa acattttctgtgaatatggtaa aacttgtgagagtagtttgtaa atgattgaagattgga|$ aaacattggtataagagtgagtgtggggttttgtattaagattcattttgggaagaaatccatgctgcatcc ctcatqaagtgtgaactttgggcatgtgttgattctttctggcccagagtttacctgaagattagctgccct gagggtcactgagcattaaattagatgatgtctgtggatgactgatagtgaagctcatagcccacagttgac  ${\tt acataataaattcgagttgctttgcttccccttctgttcctggctgactgtttggcctttgccacttgttcg}$ agcccagaaacttggtcagtacttggatgggggatcacctgggactacccaaggatgtgggctgtctgctag  ${\tt actatagccccttgagggcaaggtgggcgccttgctcatggttccatcctaagccccagcacagtagtgggt}$ gcatggtgagccattagtgaatctttgtggaatgaaggtgggagaaaataaaatacctgtacttcacagggt attgtgagggtcaagtaaaagtgctttaaaaaaattgtattatatagtttattcccttgtgttagcccaggtc gcccccagagctttctggaagggcagccatgaacccagaggcctaaagtagatttactgggaagctaaaaa tatttactttatttttcatagctcctttcaaggtcctctctggggggtcttagcaatatgtttacacagtggt atgtttttgtaaggtttgcaaaagtaagattttttaaaaaatactatcttgttttaaaaagagagccccctac caacttgtgtcagcctcaggccccacctgcatctgctcctgccagggcatggtggggcaagaagcactgct ccccttccaaagcttccttccttgccctggagtcatcctcactcccactccaagccacctgccatcgctgt gcccctctctggtgaatctggcattcttaggtgggctgagaagcagactggcccaagctaaggcctttctg  $\verb|atggggttgttgctgctgagaatcatgactgggtgggagaaggaggtgaccctttzgctgtcttattttac|$ tgtgtatttccttttcagctacttaaaatgtattgcttagtgatacctaatgggttcattagcctgcttcct actgaacatttccgctcaggcatccacttggtcccaaggcctgctcctctcccatattctgaaatctggact acagactctcattcaactccaggttgcactgtggacacagtcccctcttgagcaggtacctccttgcagtgg  $\verb|ttgggacgtcctacttggctcatagttgggaagtgcatatgctggagctgaagcctcttgccttcccgggat|$ agggcqtcctcacatcccctctgagaagttccccagcttccctctgttccccgtttccacacttagcgaggc  $\verb|tcttgtccactgctacatcccccatagccagtccctcagccttgccattgcttatgctggtctggaaacaat|\\$  $\verb|tcctagacttgtggggcatctggggaagttctccatctttttttagctggcatgacccaagtggtgtgggca|\\$ tgagtcaagcaagatcttagctctgcaggtgtcttgccctgtccaaagttatggccacaccagtacctttta actctagaagcccagtaagtgttttgtgggaccgcaaagatcattttctagacctgctgaatatgcctagaa ggtccctgtgaatggcactctccatgagaactgtgatgatttgagttgaatagtgcacagcctacatggttc  $\verb|tctgccatggcctggagttccttatcttgccttctccagtgaggactagggctgcaactggcctactttggc|$ tcctgacttgggggattctgaaataccttttttttttaaggttgtggagctctctgaagcttataaggattt tgccaggaaaagataagaaatatctttgggcattttgtcactgtgctggagatgaaccctttggaggacata tcaccttgttgaggtcaaggggcggaaagggacaggactggcagagagatccgggggcagcagcctgccatcc cgactgagtatggagtttctctctcccttcagctgcacttttgtgtggagtcagtggctcagctgccacttc ctctgttgcccaggatggagtgcatggagtgtagtggtgatctcggctcactgcgaccaccgcctcctgg attcaagcgattctcctgcctcagcctcctgagaagctgggattacaggcgcatgccacaacaccctgctaa ttttttaattttatttatttttttttcaaggcagaagaatttttcttagtacagaacaaaatggaatc

tcctatgtctacttctttctacacagacacagcaacaatctgatttctctatcttttccccacatttccccc ttttctattcgacaaaactgccattgtcatcatggcccattctcaatgagctgctgggtacacctcccagat ggggcggccgggtagaggggctcctcacttcccagaaggggcggccgggcagagggcgcccccacctcc  $\verb|gggttttaccatgttggtcaggctggtctcgaactczzczztzgacctgttgatccaccztgzzcctcazgc|$ zzctcccaaaqtgttgagatztacaggcatgagccactgcgcccggctctgttzttttttgtttgtttgtttg gttcactgcaacctctgcctcccgzggttczaaacaattcttcctgczctzcagcctcccgaatagctggga  $\verb|ttacazggcacttaccacczaggcctggctaatttttgtatttttagtagzzazgacggggttttgczcat|$ gttggccatttgaactcctgaccatctttzgaactcctgaccatgtttgczcatgttgaactcttgacttca gzgtgcgttggccztcccaaagtgctgggattacaggtgtgagccaccatgcccagcctgtttggcctttct gatatgzgzcztcztgactaatctttttggaaattzagzzztccccagggttatactggattttacttaggg  ${\tt aaaagggtcatgczctctctggctgtcagzatttactgatagtactaaggzactcagztggggtgzzzgzact}$ ctttgattczztzggtttgatttttgaaaatzcaaaaagacgtgagctccagggagcagggtggctttggtg azcatggcaagatagttggctgtggczagggagttgagggaagtgggtagaaaattaacatcttgtazaata ttzzczcctgggaaatataccttcgtgttaagagaacagacttggcagzcczzazzzgzzazzztzzzggcc taggttcaaatcttggcttgatgcttatcagctgtgtaaccttggataattccatacatctctgtgcctcag tttcctcaaatggaataacaatagtacctccctcaggactattgtggcaaattaatggacgaataaggggaa gcacttagtacagtgcctggcccagcataggtaccaggcttgttcttaagctcactgcatttttacaatcat cataaaatgcaggggatacacacatgaaggagccgaagttcagagaggccaagtaacttgcctaagaaagca cagctggcaaggggcagtaataggaccagaattccagtttctcgtgctctgttgttgttatatcctaaagag gagacaagagggcttctgaaagaaatgccagattcactccacttcctggcttcaggcaccgatggaatgttt cattcaggcagctgctaaagttgaggttacagcctcagactatattttctgtccttgtggaaccccagtgtg tcatcttgttgggagatctggtgatacatgtgtcaacattatgtcatcaaaatggaaattctttgaaatctt taggtgattgcaattcacgttctgtatgtatgcacttgtcaaaagttttgatttgaggccttagaattttat atttggaaacctttccactaccatgagttttcccagacctgtcaaagccaggctgcatctcagaaaccaggt gcactgcaatgttgaaatattacttgaactaaatcaaatcaaagatcagctttactcagacaagaatagaaa acacaattgcattcgattacagaatagtgtgtatccccacaaatatcagactgcctttaaaaaagttttgaat aagagcaatttgggagtccagtttgtttctcattgaaagctttcccatttctggtcctcttgtcactgttgc attgaggcaccaaaaggcaatctcagtgcgacactattcaacagactaagttgcaccggataatgataccat tttacatttttcatatattattacattgaaggcttcaaacagcactagcaggggcaaattggtattattatc tccatttcattgatgaggaaaccgaggctcgaaagggtaatgtctgttgtccaagattaaagagtaaagttg tacgttgaatcggggtctgactcctaggcttagcattttctccccacactatgctgccatgttgcttattcc aacattaggaagcataggtgccatccccagcttttgaggccaatatcacgatgaagcatttttaaaacatct cattaaattgctgatatagtggaaagaaccaaagctttgcagtcaaagctgtttggggttcaaatttaccact tgtttgttctatgaccctgagcaagatattctccagatctgtttcctcatttgaaaaatgggaataataata cgtttctttataggctgttcttaaagattctggaaaataatgctaatagtgtgcctaatgcttggtaaatat gagtcacttttctgtgcccacaaagcactactatgtcccttaataaattttgttaattttaaaagttagaaa aaaattaaactatttatacattgtgtatgttaattcttccctagaccagccttaggaagaatctcatcccca acttgtaaactcatctttttccgttctttttgtgcctggacttctcagggccctgcaggctgattctagtcc  $\verb|catg| ttgtgtgtgtttgaagtgtcttgttccttttttcagtgagagaccagctcatccttgggaactgaat| \\$ gcctcaaactctcttttcttttctctctcccccttctgtttgatgtagtctttcctgtttctggactctgt  $\verb|ttcttcatacttcctatcttttcactccttttgtcttccagctgtcctctctattttctg|$  $\verb|cctcttggtcttcaggtagagttttcatctcagctatcttcttgctttttctgatgttggttctttgtttc|\\$  $\verb|ttcttctcattctgttcaggtccaaaattcatttgggtcaatgttatgtcttagtgttatcttccatttcct|\\$  ${\tt tctgagcttcaaagccaggctgactgtgcccttccacgccctggccagtgtgaccaggacatcctttccctc}$  ${\tt tggggctgcactggctctttgggggaattgttaccattcagggtcttcaaccctcattctagggacttccag}$ taacttctcccaccttccctcttctcagtaagacatgggtattgtcttattctgtttctgctgctagaagaa  $\verb|aattctcgagactgagtaatttatacacaatagaaatttacttctcacagttctggaggctgggaaatccaa| \\$ aatcaaggtgtttggcaggttttggtgtctggtgagggctgctctctgcttctaagatggtgccttgttgctgc atccttaggaggggacaaacgccatttcctcaactggcagaagggactgaagcctctccctcaagccctttt ataggggtcctcattgtcaggcctctaagcccaagccatgccatcgcatcccctgtgacttgcacatatacg

cccagatggcctgaagtaactgaagaatcacaaaagaagtgaaaaggccctgcctcgccttaactgatgacg ttccaccattgtgatttgttcctgccccaccttaactgagtgattaaccctgtgaatttccttctcctggct cagaagctccccactgagcaccttgtgaccccctgcccctgcccacagagaacaaccccctttgactgta attttccattaccttcccaaatcctataaaacggccccacccctatctccctttgctgactctcttttcgga ctcagcccacctgcagccaggtgaaaaaaacagctttattgctcacacaaagcctgtttggtggtctcttca cacagacgcacatgaaactcatggtatctgtgaggggccctaatgctattggtgagggcactgctcacataa cttaatcaccccttaaaggccctgcctcttaatactgtcacattggtgatgaagtttcaatgtatgaacttt gaggggggacacgttcaaatcatagcaggtgtgctattgccttactagcaaagtaatctgggggaagatgag taatgtctcgttccacccctgattccagtgctgactgattctggagtggcagagagggttggaggctcaccg ctctgctcacccgaccctctggccatctcctcttagaatgcaagggcagggattttgttacacagcgcctct tttgttataggctagctcctgccttcaaggagcactgagaaaaatattatccctttgaaccacaacactagt attttgggtactgtagccattcagaagtttgttgaactaatacaagtttatattatttgtaaaatactagaa ggaatgtgtggttcctaaagttatggtattcccattggttgaaagagaagazctctggcttcctaatgcctt ggaaggttcagggagcataagcctaaatatcctggtttctctttgggaattcttcacagcttgtcatctatga ctttatccacatttattttgaacatgtttaattttcagcttgtattttctcaaggagtatgtgtgagtcagc attcagagtacttaacacacttagtgtcattagtgataacttaacccacacgtatagqaaqctagacctcca tttacagaaaaatggaggctcagagagcctaactgactttcccaaggccacataactggaaaattctggaac  $\tt ggaaagcccaggccgggatgaacagcatgggtgtccttaggctgtgtgtaccacacacccctggcctactct$  $\verb|cccctgctctaaggagtcacctgaaggagcagctgcatcaccccgcctcaccccttctcctcagcacccaac| \\$ aaccaggtcttcccagagagtgctcagctattggtgaagcaggcatcgtctattcttcaagaagacagcaga gcatcaggaaaacaacaccaaaaaaataccataaagacactggagtgtatttgttaccagcccttgtata acagagaagtatttcaaggtcttatttgtaaggctggacaagctcaggctgattaaaaccacgagttagaat ttgtctcccgctcccaggccctgctcagttgacagctcctagcaggctgggaggccccaccccaccc  $\verb|ccaggggtccattgaagaagaccatctgggcctgggatgctgatgtgattttccctacttctctttttt|$ catttgcctcctccacccacttctaaagcagctgattgctctggttccttttcatgttgagcaaaagagaag  ${\tt acagatcttgaaacctgagctggggactggagggcactgaccgagagtaaccccgtctggctcagctcagct}$ cagcaaagggctttcctcctccgccttcctgagctgctctcctcctctcttcctttccttctttcccagcc tcccccaagctccttcacccctctcttccctcctcctcctcccaccttccttgtcctctatgctcagag aactgaaggaacactgaatggcctggaaagcaggacctcgcccccaccccgcgtcatacccctccqcctqca cgtgcaaatgtgttcctcagcttggtcccagaggcctggacctgggtcccagaggtcccagctggttccccg gcttggtcccagaggcctggatgtgtggcaagaagctgagggttctgcttcgtttcttccagcccacaaaca cacatgtcacctgttttttgttcttttcctttcctttgccccactttacagaagctcttggctaattggta ggtcactgtttgctcctccaggcaaaaccaaggaggctgagctcagcaggtcaagtattttggtctgtattq aagagactgtggtgggagagccctcttgaccttctgctggatagtgactttctcttcttgctggcagcagtag cccagctccgcatcctgtgacagaggtcataccttccagttacccgagcgaacacttggagcaagtcagctt tttcccctgaaacagcacgttcacgttcttgatctttggtttgcacaacaacctqtqaatqttattaqcccc gtttttttttgtttgtttgttttttgagacagagtgtcgctcttgttgcccaggctggattgcaatggcgtga tctcggctcactgcaacctctgcctccaagcaattctcctgcctcagcttcctgagtagctgggattacagg catgcgccaccacacccggctaattttgtatttttagtagagacggggtttcttcatgttggtcaggctggt ctcgaacttccgacctcagttgatccacccgtcttggcctcccaaagtgctgtattagccccattttatatc caaggaaactgaggcttagggagatttaaataggggggaaagtatagcttcatgattacacagtcaggaaat ggcagagctgactcttgaattcagaccctgtgatgctgtatccagtgctgattttgttttgccctgtgttcc tttcagtgtcaggtaagaagacctcagagatcatcttctccaacccacacattttactgattataaaatcca ggtccgcattaactcattggccaaagttaagtggctaaatgactctcctgttcaggaagtattccctqtctt ggttaaattagccatgaatctgttcagatcagtcattcctgaaaatgatgatgatattagccatcctttacc  $\tt gggcaccttactcagtgcccggcattatactaggtctgcaggtacatttgctcatttaacacctagctcagt$  $\verb|cactctgcttctagctgccactcacctgactctcctcttgatctgggctgacgtggctgagtgggtttagca|\\$ gaactettgtgteetetttaettggtttgttteaagtteatgteetgetteatetttteeetaacteaetge  ${\tt aaggtgaatttctctctgcaatcggcaattccccaaatcacatcaggtcattaatttattcactcatttg}$ 

gccaggcactgctggctttggaattaaaaaccctggccctcaaggaatttctattcttctgggagcaggata tttacatgggtgactgczagcttgatctgtgtggtactagtggaaaacataggatgttgggcacaaaagagt cacaaaacgccgggcgcggtggctcatgcctctaatcctagcactttgggaggccaaggcgagtggatcacc tgaggtcaggagttcaagaccagcctggccaacatgatgaaaccccaactctactaaaaatacaaaaaggaa taatagctgggcgtgatggcgggtgcctgtaatcccaacaactcgggaggctgaggcaggagaattgcttga acctggggctttggaggttgcaatgagccaagagcgggccacttcactccagcctgggtgaaagggtgaaac tctgtattaaaaaaaaaaaagtcacaaaaaagggctggccacctaacccagcttgaggatgggaaggccag ggcaggcttcctggaggaggtgactcatgggccatgtcatgaggatggggtaagaggagaaggtatgtttca gacatctggctttcttaatattcttggctttccacccattttcctgccagcaacataggggagaagactgag accagcagatacaaagccactgtactctgtcctcacccccttctttttctccccttcctactacccagatc gcattatgaccacaaaatgtcctggtcgttgtcatcatgagaggtcttaccccttcctctccagccacttct agggatttttgactctgtccttttccagaacttggctccagtctggttgctcgccatgaagcacttacagat gaattgatttgcctctttatctcccctttcagccttgaaagttcctcgaaggcagggactgtgtccccatct tttctataaatggcattgttgtacattggtaaagttgagtgaaaaaatctttttgataatcacaaattatta ccatatattgagcacctaccatgatgagtatctctgatcttcatatctttgaaatgtggatactattacctt cacttaattggtaagaaaatttgtgctcagggaggtaaagtcactttctcacagtcacacagctatttcaca ggagagtgcagtatcaaatttaggtttttctggtcccaaaccctgatgtttcccccacatcattgtttctca  $\verb|ctgtcacccaggctgcagtgcaatggtgccatctctgctcagtgcaaccactgcctcccacgttcaagtgat|$  $\verb|ttagtagagactgggtttcaccaggctgatctcaaactcctgacctcaagtgatctgcccacctcacccagc| \\$ caggttttattaaattctgatgcctgggtcttaccctagcagttctcattagttgctccatggtgtggcctg ggctttgggatttttgtgaagcccccagctgagtctaacgggcagtcatgtttgagaaccagtatactacac catgttgccttcctgttttcacacaggttggtgctagtgtgtgagtctaagcctacatgggtggatatccac accacaccatgcacgtgcacagccaagggttgttgactgtttaatcagtctctgggttcttatgtctcatcc gggggattcactgataggaggctggagcttgatcacatccagatgttctcatcttcagagcctgttaacata acagaagtettataaacatgetgageacaeteaetggtetggagagtgttgeaggatgaeetaggeeeattg cctggtgcaatatgatgtattgctctggctctgctcaggaggaagctatggcccacctagtcagtgagggtt agctaatacgtgtattctgtttctgttgaggtttcacagaggcctttttttgacccttcattttatagataag  $\tt ggtggtgctttttccatggttgtacagtgattaatgtctaccttttcacaccagtcctcaactgaagacacc$ agettaeaeetteetteetgttteteeeaagaaeagaaagtgaeeeeggatgtegetttetgtteetgggaa ggcagttccagtggttagaagtcctgttcactcctggggtgtggcctggggatggtcctgacatccctgggc tcttcctggacctggccagctaaaaggaaatctcctatgatggtactcagatacttttggaaccttgtcagc  $\verb|cctaatcccatctcctagtgtttagtattcagctacccttcactgggcagtaattctgtgccaggcctgatc|$ tgggcattggtggtactaagaacgcatattccctatcctataggcatagtctggtagagacaacatgcaagtaaatgtagatttgtaggctctgcactctagacccactatttcagaatctctggggactgggcccaagaaact  $\tt gcattttcgcatgctccctaaatgaagcttaggtgctctgaggtttgacaactgcagtagagagcctaatgc$  ${\tt acactaactgggcctaagaacagctactggctgtcatgaggaataactaggagctagccatagagggtagc}$  ${\tt agtgaatcatttctctagcgatgtaaatcttgctcaatttattctgtctatataactcaatattactgaagt}$  ${\tt tactttatctctgcatgtgaccctcttasstccgcggattaactcctgtcctcattaagcctcacactgtag}$ ccccattttcagatcaaacctgtttctcttctggtaaatgatttcagtttgcaaagtttgcctctagaggt  ${\tt tgcttagtgcctggccatgtgggctcagttcatgtggtcctgatgagctggttttatctttattacaaagaa}$ gttaggctgttaggagagtgggttggaaggagaagaggtagacagccaaatgagatgagtcagggaaaacta tactgtttcggagtcatagggctcctaccaagcatctggtcagaaacctctcattttggagatcaagaaatt gaggttcagaaagatgacatgaggtacgcagggacgccaccagacacagcctccaactctagaaactaaaat tctggattcttagtgctgctttttctgtttgttgcactggattgaagccttttctaactgtactcagaggg cctattatttagggagattccgtatgaaatcctttagcaatcaaatcatttaatagggctgatggtttaaat atatgttaatgtgttttcctaaagcctggcagacctgggttttggagctttgtatcacatgttttatgtttg gaatgaaaatgagaccatgtctgtgaaggcactttgatatgcgtaatgcactctgccagtgtttgtcaaaac

atggtccccaggtcagcagcatcagcatcacctgtaagtgattctccagtcgcatcccggcccaggmsmggg gtctgcattttaacaagctctccaggtgattctgatgcatacttaagtttgagaaccattgcttgttttgca ttaaacaggagattagtctctgcagcttgtgggaataaagctttaaatctctccaattttagctctgtgaaa gagaaagaccgggcatggtggctcacgcctgtactgtcagcactttgggaggccaaggcaggttggatcaca tttgccagtcatggtgatgcatacctgtaatcccagctactcgggaggctgaggcaggagaatctcttgaac ccgggaggcggggttgcagtgagctgagattccaccattgcactccaacctaggtgacagggtgagactcc tgtgtgtaacagcaccatcacactgtttgagttgaggagcacatgctgagtgtggctcaacatgttaccaga qttacttactaaataaaaataaaacactatttctcaatagACTTGAAGCTTCAAGATTTCCTGGTGGACAAT GAAACCTTCTCTGGGTTCCTGTATCACAACCTCTCTCTCCCAAAGTCTACTGTGGACAAGATGCTGAGGGCT GATGTCATTCTCCACAAGgtaagctgatgcctccagcttcctcagtagggctgatggcaattacgttgtgca acttcacttaattttacttccctattcaggcaggaattgccaaaccatccaggagtggaatatgcaacctgg cgtcatgggccagctggttaaaataaaattgatttctggcttatcacttggcatttgtgatgatttcctcct acaagggatacattttaagttgagttaaacttaaaaaatattcacagttctgaggcaataaccgtggttaag ggttattgatctggaggagctctgtctaaaaaattgaggacaggagactttagacaagggtgtatttggaga aaataggagatcagtccctgcagcttgtgggaataaggctttaaatctctccaattttagctctgtgagatg gcactggggaaacagaaatgaacggactagtgtcacaaagctcaggtgggatggacgagatcacttcaaagg tctgtaatcccacgtctataatcccagcactttgggaggccaaggcgggaaaatcacttgaggtcaggagtt cgagaccatcctggccaacatggcaaagcctgtctctactaaaaaatatgaaaattagctcagcgtggtggca tgctcctgtagtcccagctactcgtgaggctgagacaggagaatcgtttgaacctgggaggcggaggttgca aaaaagaattttataaaatcaggaaataatattagtgtttatgttgaattttaactttagaatcatagaaaa  $\verb|cttcctctggcatcattattagacagctcttgtgcagtgggtagcaccagacccagcttgcatggttattga|\\$ tttttcagagacactttttgagcttattctctggcagaaaggggaactgcttcctcccctatctcgtgtctg catactagcttgtctttacaagaagcagaagtagtggaaatgtttattcttgaaaataagctttttgcttca  $\verb|catgatctagaatttttaaaattagaaaaatgtgcttactgcgtgcccttctgaaactaggaaaatatgcct|\\$  ${\tt tgtgtttaccaattgtgtggttaggagatgggccaaaggcatcaggcttttgaaagtagttgcatttagcat}$ aatttccattgccccctgccaatttcatatctgtcacatctaatcagtttaaaataaggggcatcctaagca ttattgaaaaattcttgggatcaatacttgtgtaaggaaaggaaagggaacaaagcatgattgggcagaggc gctctgtcacccaggctggagtgcagtggcgtgatctcagctcactacaacctctgcctcccaggttcaagt gattctctgcttcagcctcctgagtagctgggattacaggcatgcaccaccacacctggctaattgttgtat ttttagtagagacggggtttcaccatgttggttggccagactggtcttgaactcctgacctcaggtgatccg tctgccttggcctcccaaagtgttggaattacagacatgacccactgcacccggcctgttgtcagtattctt aaacatagacactaactgtaggctgacagcctagcagcaaggaccagttaaagaaatgagtagaactgaagtgtgcttgagtatctctggcagtcagcaaaaacttaatgggaatcatggtaggccaaatgttctgcagtattt tgccccaatttaaacagggcagttagtaatggtgtaataaagagtctgcattgttcattccttcaacaaata ctggctataatgtttcagcactgtggatgcaaagtgagcaggataaacaggctcttctttcaaagcttgtgg tccactggaccacgtatgaagtagaatagtttaggtccagaaaggcaattaagtaaaatatgaccaagaaga ggctctctagtgggtttggtataaagaaaagataagaatgatttagaattggcctatcaatgagataagagg cctggctttctggcactctgctctagggcaagtaaaattggagaattccaaattctgaaattgttagaacata gttctgtgtcttagttaaatatctacacttacagataaatagcataaatgctttctccccatatttcagccc agtcctacttaaagacaacataaattgcaaaatagtgaggatgttgttcatctaataaaagtggttccagga  ${\tt attcagactctggattcctgtttgccaaatcatgtgtcccactcttaagaaaacgagttggactctggattt}$ ttctttgcaagagggacaagagtgtgggagatactgagttaatgcaacttgcaggttttaagtgtcctgtca ttgtgccttgtgctttgatacattctgagtttcagtaaagagacctgatgcattggactgttgcaatggaac ctgttttaagatcttcaaagctgtattgatatgaagttctccaaaagacttcaaggacccagcttccaatct tcataatcctcttgtgcttgtctctctttgcatgaaatgcttccagGTATTTTTGCAAGGCTACCAGTTACA

TTTGACAAGTCTGTGCAATGGATCAAAATCAGAAGAGATGATTCAACTTGGTGACCAAGAAGTTTCTGAGCT TTGTGGCCTACCAAGGGAGAAACTGGCTGCAGCAGAGCGAGTACTTCGTTCCAACATGGACATCCTGAAGCC AATCCTG gtgagtagacttgctcactggagaaacttcaagcactaatgctttcggaatgtgaggcttttcctattctaagtgttcttagtgttctttcagacttttgggccatctcccaaagggtgaatgggaagaataagctg ggtgtggctgagtttaagccaaaagttttttgtgcttgtttcaatcagagaagacctgctttttcatgtttt accattgatgggaagatggatatctatttatgtttaaaaaacccatcataaagatgacattgtgggctgtcac aaccaaaaaatactggtgagcctgagcagtttggtcatcagagtgttttatatagttccagaacaaatatgt ctctaggtgttctgagagctctggtgaaattcctctcgctaccccaaacatcatcatttaatatccaggatt agagatgttccttattataataaaatgaaattgtaatactcttggattttgtgcagcacgaattctttatag agagttggtcctcccagagaattaagaatactcagtttctggaccctgttcccagatcataccctagaatgt  $\verb|gtggctcacgcctgtaatcccaccactttcggatgccacggcgggcagatcacgtgaggtcagcagtttgag|$ accagectggecaacatggtgaaaccetgtetetacaaaaatacaaaaatageegggegtgatggtgggea cctgtaattccagctactcgggaggctgaggcaggaggatcgcttgagcctaggaggtggaggctgcagtga gctgagatctgtctcactctgttgcccaggctggagtgcagtggcgcgatctzcgactcactgcaacctccg tctctcatgcttaagtgattctcatgcctcagcctccgagtacctgggactacaggcacctgbcaccacgcc cagctattttttgtattttztagtagacatagggtttcactatgttgcccagctggtctcgaactcctgagc tcaagtgatctgcccacctcgggcctcccaaagtgttgggattaaaggcatgagtcaccgtgcctggtccca tgttataattttaaagtaaggtatatttctctacagggatctttgcaaccctaagtaazctggcctaaaaag ttagagaagctgacttgtgcagacatttgcagcctgttggtctttttttgtgctgtgaatcatagagggtgaa aggttattatgaatggtacaaaactttgttacaaaaccattttcttggactgttttgggctgcttcactgca aatttgttccggtgctgtgcccattcattccatttcacttctgtttactcattaaacacctattgtgtacac aacccggtaaaatccctccactcacacaatgcctgaattatactcatagtagaatgactgtttagccctcat catctgataattaacagctcaggtttcaacctgacagtatctctctgggaggattagcagcgtgacagagtg  $\verb|cagggaaatgcaccttcagaaccgtcagctacactgtgtcccatcctgctgttgttgttgttgttgtccttgttgg|\\$ atgcgttggtttatgaccaggtattgattaaggtqqctactaccaqqtqctttctqcatatctcqqqtttqt ggagcactcaggttctgcttctgcccctctgctgttaccaagagacctctcttcaaaatggggctcttgagt tagagtagaatgagtgatcaggattgttttgtgtaaagatgattttctgaggaaggctttaggatgaaatgac ttccaaacattttgaaatgtgactcttacttattgaattaagcagggccttaattggaatgctgggactgat acttgatttgcattaagcagcctttttctattgctgcttggzttgaaatttcaacatttgtgatggtagatg gatgtgacatgtgatgacattgcacatgggcagttaactgtgccaagaagtgcagcagtagcagcaaccgga gatgcaaagcccaacatgatggggagagaaactcttctttcaatatgtgcttctgtaccaaaagtggaattt attgtgagtttctcctgggcctccttcagaatctgggtgctctggaaagcagtgttttggcaacatggggaa agtatggcagtgtgggagggtcagctgggtctgggtttgaatattgcatttgaatattttaccagcattgat tttgttgtgattattggttacacatatgaagagcctggtgtggggcctggcacacaataggtgctcaataaa tagaagttgataatttaattgacatgagtagtagaaattatgtccttgaaaacaattgcgtcaagatagaag ttttcagccaggcacagtggctcacatctgttgtaatcccagcatattgtgggggccgaggcggatgaatca cttgaggccaggagttcaagaccagcctggccaacgtggtgaaatcccctctctactaaaaatacacatatt tgccaggcaggcgtggtggcgcacacctgtaatcccagctactgaagaggctgaggcacaagaatcgcttga ctgtctcagaaaaagaaaaaaagatagaagttttcttctgtagatcagtgttagaactcataccaagcgaa gtggtcctggtgagtatttcagtgaaaaactgcattcttgctcagatattgtcaagacttttcacccaaaga ttcttatttatgtctcagtccgtaccttgtgtgaaaattaatactggatgtcagaacgctgttgtgttttta aagttccctggggttaagagcagtttccattaggtgttctctgctttttacttaaaaaatcttactcatgcat tgagcaatatttattcagttcttattatgtgtcaggtattttctaggagctggactcaactcaaaagatatc cttttgatgagaacaaaggtgggtggatatatgaaatattatctgtgggataaatgcacttagtcatgaggg agacttgttatggagtgcgctcattgtatttgtactgttgagttaacaacttctaggaggagctcagggcca cctggcaggggcttcttttgtcttgctgctcagcaaggtgtattttgctgtagagtgtgctgggcaggtgaa cttttcttaactttctcttgggtccttcctaaagcatgtacctttcccagagcgaggagaggccacct

tagcagtttataaccacatacatttatttcataaggccagaagccaggatacagtagagctcacctagg agatgaatctgctttggagctcatccaggatatcagatgaattcagtcccgtgcagttgtaggactgaagtc catttccttgctggctgtcagcaggggctggtttttgctcctaaaggttgccatcattccttcttatgcttt tcatgtgactcctctcccacaagtgggttgagtatctctcacactttaaacctctgacgcctcctgtcacat ctgtctccagtcagagaaagttctttacttttaagggctcaggtgtttagtttgggcccattcacataatcc aggataateteettattttgaggtteataaetttaattaeatetaeaeagtgeatttgetatgaaatqtgea tattcacagactccaggaatagggtgtggacatctttgcaggggatattcagtctgctgtagctttcttgat tggaaggaatagtttatcatatatttgaagtgttccctcagtgcctttggcttttgttgacccctctgcagc tetetgetttttettgeecatatttggaaagtgaetetaaageataataageatcaeetattaqqqttttta atgtacaaaccaaacagaggtgactttgggaggagaacatctctgaactaggtatgagacattcatcqaaaa aaatccatcaagtgtttattgtatgtctgctttataccagcactgttctaggcactgaagttcgaccaccaa caaggcagttgtgatgcacttggagctttcattctgatgggcattgagatccaggctgaaggctgagtctgg gaatttgaggaattctttgtaggtcctgggtctacagagtgagagctgtcctcgttccagtttcactgatga  $\verb|cctctcgaccagctcctcacagcagtctttgccaacacagacactgtgggctgtagtgggaggaatgtggg|$ gttgaatgagctaggtttgggctctgtccttgactcaccattgcctcagtgatgtgaaaatggtgtctgatc ttgtggaaccagtggttccactgtccacgtgtcttccagtgtgcctagcacattcccaccaagtggatcttg gttcatgagggaaagaagggaaagtgagggtgccccgaggctcccagaagacaagtaatgtcacagctgagc gcttcttcttgactcttagacaaggacccagaatacagatggggcttgttgttaccttcagcctcatggctt tttagggctagatacttcagcttgttacatgcagtccttaaagcgtctgtgtggggtttttgcaggagagaac  $\verb|aatgacacactgtgtagatttactcttcagactctatgttcacctcattcttatgggaaaagaagaacta|\\$ gctggtagatatagcagtgtttaatatgactgctcaactccatttacacagacattttcaccttagttata  $\verb|ctattcattaaatattgttgccagatctaagatacaggtttaattttttcctctgaattatgtggtag|\\$ tagatgtatttaactatgtttagaaacagcaaaaaatgaagcgtttgaatgcgttaaacacatctaatttga  ${\tt aagttaatatttaggttgttgatttatttttaaaaagattagaatattccttagaaatgtagtcttataatt}$ tegtattteaataaaaatattaaaatgttteecagaggaaatetttaetgteatagaaateaceagaaaga gatagcaattactcctgggtggtgatagtctttgattttgtggtttacttgttttcagtttgaactaaaacat actaatcccagcctgagttggattttgcatatggtcaaagtgaagtagagattttttgtctactttatgaaga tatttaaaggacatttgaaatgtttcaatgaacacattgtaacatgcattcccaggaggaaaacaaaattgt gtattgtgttgaaaatactattccaatatatgtatacccacgtctcattttgtcatagaattcctgaaaaat ttagatgtagatgagatttttataagttgaaaatattttcagttgcattttaattgcacagatgtgttttct acttctatttggctgtgactcctaatgcattgtaatattatcttccagtgttcatttcgtgtagtgataatg gattaacaaatgcattcattcatttagtaaacatttactgagccctaatcagtgccatgctctggcccaggg aggagcagctgccgtatagagcaggagacgctctgctgggtgtgatacagtccctgatggggcctcctactq cagtctttccagtcaggaaagaaacatcctctaagtggggacctaaagaatggatgtcagccaggtaaagaa cagggagtagaatgttccaggtagaggacatagtatatgcattggtccagagaggaggggaagagaggtg gcatttaggggaactgtacctgattgagatagttcagcatggagcagatatagctgtggggagtttgatggg catgtgaggatatagggccttatcctcagagtaaagggagccattaaaggctccacaggctgagtgacttga tgaggtgaatacgaaacagagcatttctgtgaatgtgaatggcctttggagcagaactaagttcatgaggat gagcttttgaataataacagtaagcatttgtgcattcttcctgtaatgacattacagttatgatctgaaaat attgagtcatacatgaattcctgttatcttaactcagaaaatatagtccctcactaaaggttttattttcct tctttttcccatttcctttacttcgtataagaaagtcacttgtctcctgggtgcaatggagacctatgtgag ttcatagccaagagaatgtttttggttagaaaaataatagtaggaattccaagctgtgaattttttactgaa gctctttggaaataggatttggcaagttttgtctgccttcgtcaagtaagcatgagcaggagagcacagtta atagcaggtgcagacacatgattctcagaccgtattttgtgttctagtttcaaggcatgaattctttcctgg ggttaattttattcaaggaagttatctgtctgttagatctgatatgtgctcaggccaacatagattctttac ccttcctttcttcctgctcacctgtccttcttttatcttttcattgaattaaaaagaaaattatgaaat

gcaatcccagcactttgggagtctgaggcagccagatcactggaggtcaggagttggagaccagcttggcca acatggtgaaacactgcctctactgaaaatacaagaattagccaggcatggtggcgtgcacttgtaatccca gctacgtgagagactgaggcaggagaattgcttgaacccaggagggggaggttgcagtgagctgagatcaca ctgtaccatcatccatcattttgccgtgctgactccaggttctatttaagaaataaaacattacaggtacag ctgatgccacctctgtttccctagctcattcttcagagataactcttgtcttgcagttggatgttttaatcc tctatatcaztgtatacttacattctatgtataacaatatttggtactggcctaaatgtgttcacattgtat aagtgtgcatattggcctgccacttcatttggaattatgttcttgagatttatcaatgttgatacatgtgga atctggttaatttttgccatagtattctatttttatactaaacttttaaaaaatccatgcttctagtctttgg cttattttttcaggttatggtatgttttggatgcacagaaaagtaaaattaagtcatgagcaaaatatctgg ataatccaagetttaaaettgatgtagaatttgaateatgtgtgttttgttaaccetgtgatgtcaatecat gcctgattgtgtaactccaaccaatattcctttgaaaatggaaatttgtttatattgactacagattgccaa tattattagtaaatgctgagcacttaatctcgaataaagaactagtttaaaaatgattctaacaatggcatt gactgttctaccttattactcatgggtgggttcagccaatgtttctgttggagaccaaaaccaaaacagtc aaattaaacaagcagtcaaacccaacatacagactactgataagaaggtcatatcataagatatggcattga atttgtgtctgctaatgtaaaaatctgatgcccacagcaaacttaataaggacctatgtttacatccatgct caattacattcctgggttaaacagtcatgctttaggccctgctgtgtgcctggagttttgctgaagtgtggg gcttttaagagaaggagaataagcttgctccagaqttaagaaatttaaactaaaagtcctaaagatgttgga actgatttgtacccttcaggagacagatgaccggtaatggtgacaatgggtgaatgttgggttttggggtttt tagaaacatctgcacttggtgactactgtatctaattggtgtgacaaacctggcaccccatgtgttttggcac catcttgggtcctactcagggccaggtgaaccgagtggcctcttcactgcttcagagtctgaagcagattgt agtatgcggaccagacacagaatataccaccaagcacgttggcgcaaagcatactgggaagggaggctttgt gaacatggtgctggttctcaaacctcagtgctcaaaagagtctcctgaggattcctggatcacactcttaaa ctgatgcccaggctggagtgtattggcgccatcttggctcactgcaacctctgcctcccaggttcaagcaat tttcctgcctcagcctctctagtagctgggattacaagcacatgccaccatgcctggctaatttttgtactt ttggcttcccaaagtgttgagattacaggtgtgagccaccatgcccagcctgaatctgcatatttaacaagc accacaggtgattctgatacagtagctccccaaacctcacagtgttagtgaatcccagtcatttacaattct  $\tt gccatgattttggtcatattcaagtgcagctggtagcatttttagttaatatattttttaaattaagtcact$ tcttttggataattaaatttaattacaagggaagctataccactgctgtaaaaacatcacctgctttaaaga tacctaccatagggattgagttttccttcaggtttttcaactgaaatgtcaactttgaggccagttaatatg tatatctatacacacctattatgcatatcatgtatatttcatccacttagtattatcttzttattttgccg tttggcaaatgctcagtaaaagaaaagggttagaaggggagaaaggcattttatcccaagccttcaggaatc aggatgaggatgtcttcaccttgtggtggggagtazattatacaattagagacagcacattggagztgtggc taagaccttgccgagaaacagagaaaggatgtttgtctttttaagaagttgaaaaccctgtttgcagacaaa agccctccagttttggcagtaaactttcatgcaagggaagaaaaaggcaggggatgacattgttgacaattg tgaggaattaccatgtgccaggcactgtgcgaggggctttgtacatatcctctagtttttagtgcttataaaa  ${\tt actctgtgatatgtgcacagcattttaaactttgctgcatagtcgagaaaattggaaggatggggaatttgag}$ tcatttgcccagggttctatagctaccccaggttcccatgactggagaattggggcacagggtggcggggga gagtgagtgacaagaatcctaacaatcttatttccattgagtccttataaaagaagtggattaactaccacg ttgctatgctgtcttgaacatctgtcatcttgtaggcctaacggtaaacacaaaaacactttacctcctata  $\tt gctttcaattaagatctctcagtttgtgtttgtaatagttttccaggcaagttctccctaggttcggcttct\\$ agtgtgttaacctttagttataaagtgaacccaaagagagaaagtagaaacaaaacacctcacctgtttttg  $\verb|ctcatgaattactctctatggaaggaacaatcatgaacacctctgcgtatcacagaggcctatctgagtctg|$ ccgttccagaagagatgaatgagctggacaagttctttcatagaacctttaggcaggttttctttagaaatgc acattgaggattatgcttggatattgtgatgatcagaatgatactcaatcccttctgcatttggaattctct ttgaaagaaaacatcccaggcagctatttctcagagatagtgagtcccagccacttctagacattttcttgt gtagtctacattataatttcacagcagtctctgatatgacaaatgtcaaaatagcccaaccttctctaaact tcagagatgtctgatatgatattgaataaaacaatgctcatagaaacatcaagaaaggtggattttccctgg

atacttttttcctgcttgacaaataacagtgaagaaactgatctcacgtctttttctcttttggaagcctgaa cactcagaacccaacttgaggctcctcagctatagcaattctgacttcacagtctgtaaattattgttcttt tttttctttagcttatgctttctgccctaatttatcttttccctgttctaatgaattattgtcctatatctg ctgtgcagttaggtgacatataacagcaattaaatatatgaatttggtacatataaagatttgactaaaactc gatgtaaaaataagtgttctacattcaatttccagtgttagaaacagtgctgacttgaacagagtgacagaa tgtttctcaaagzccattcccgtattacccatcttgcagacgcagacagatttgggaatttgcggtcagagt tgtattggacacatccccccagcccacatgagatccttttaatctattgcatattaactagttttaagtaca atattcctacttcatttaaaaccattaatcaaagaatgagtttgaaaatgaacaaaatgcaaacttacagtt qttttaattcacttqtttatttccaataqaqatttcaqqtttacatttgaattcagaaacaaagttttcttt GCTGCATAGTCTTGGGACTCTGGCCCAGGAGgtaagttgtgtctttccagtaccaggaagcggatcatccac tgtatcagtatttttcattcctgagtctggcaagaggtccttttgagttgaatatcacatgggatgtaatatc aattttcaaagtataagtgatgtaaacaataatgttttgatttccttattttagaaatgaagaaacctaaaa ctcatagatgtctcagagctaattggttagtggctaacagctggatatctagtttagaaccttctccatttt ttctttttgcccctaggtaatcatacatttgtaaagaggagaattatctctgccactgcccatgcactgctt ttgtctgaccagcaatttctccatattgcttcttcagtagcaaggccaatcattttaccaacacacatgctt gctaactaacaggaataacgtggtacccctaattcagccctttcccttgaaagcatctggcttctgaggttc aactatgggaatatggtctcttaatgaacattaagttgagtttgccttttaggtccacatgttgacaaatgt atcagagtaatctctgtcctaggatcagagggcctgtaggcacttgcaaaagcagttagctctgactcccag ccagtgcacactccacctttctgactcccagccttgtctcaaattaggcttggaagcgaggaactgtctggt ggaaaataataatttgtggggaaattgtctcagacttggtccacccttatttttagctgcttctctaatccg tttttcttttttggtgcttgtatctaacctacccattttttggtgcttgcatcattttttcaaatatcaaa aacgaactttatgttttctaacaatgaaagtattgcatgttcattgtggaaaatgctgaagacttggaaaat tgaattetgeteaegtgtttetgaetgatgaggtetgaettttgggtteetttteeagaggagaageettet ttcagcttgccatttgttaccctggttatgaaggctggtaaccttttttactaggtagagaagctggaccaa ctqqqqttcttccaqqqqqaaatgagaaaqagaaactgttttgcaagtccgtagctatttctctagggccc tgttagctgacattgacatgccttgcattgctctgcagatcccctcgcagccctctgtcccttgttcatttc tggccttagagaaagcaaagcagggtctgtaacaggggaggctgcctctaaactcagggtttggttacagct atgttcccattgctgatgtggtggaaactctccaagtgaacaatatacgtttttcttggcagctgtttcttg tgccctgcttgctcctggtccaggacaagcaaggaccatctgcctctttcaatagaacacctccagatccct ttgatcaaaagttactcattgtctgacttgctatttctgtgagataaatgggagaagatcaataaatgcact tgtttgtccagtcagczgtgtggaaagttgataattttgaccaaagcacaacccttgaaaggaaaagaaaaa gggagtgaatgtcttctgagaagctgcctaggttcagacagtgtcacccatttccctgtatgctccacatga caaacctgagtgggtctcatcatgtccattttgcagatggcaccaaggctcagaaaggttaggcaacttttc cagtcacccaatgagttaattgacaaaactgggattcaaacccagaactgttggattccaaagcctgtgttg acatctgggtgatgggaagggaggacagggaggcagcatctcagatgtccacccagcaccgaccagctgcct ggcattgctaggtgttgaggactcagcagtgaacacgctaacttctctgctttcttggggcacgtatagggt gagagacagaaacaaacaggtcagtgtacaatgccacaggagggatatatgcagtgaagaaaaagcagggta aggggcatagagcatgagaaggtgctttttttaaaaggggktgattaggaaagctctctctaaaggtgacagtt agacattgatgctagagcatgcctaaggaatgtgtttaaggaccagggaaagtgagcaagtggtggggggag gagaggagctcagagcaggaggaggtgagtgccatacaggcctggcaagactttggattcctgctgggtgag atgagaatccagcggagggcttgagggaggggacatgatgtgatctagagtttagactgtttacactctggt tgttgggttgagaagagactggggatgggggaaagggacaaaggacattgtgctggattgagaaagcagt aagtcagtttcattcattcactcaaccgatgatgttcaaataccaccatcatccgtgggctaaaggatgaag agccatccctccctgagagtcaggaagcacttcccagataaagtttggagtgtgagctgaggtgtaggagaa agagta agagtt tacccctg a aacgggtgctggga agagtca at agtttgga at aactca at tattggtgcttctttagaaagatttgctggctttatgtgggaagaaatttkttttttgattggggagtggtgggttgg  $\verb|tggtgaggctgcctgtggaaagaagatgagtgttttgactcactgttatttaaaaaatctctagggctgttc|$ 

aaaagaaaaagttgggaaaagctgtccacctcacctaattgtgttcttgtggagtgtgctagatgccccctc tetggagaaaaaaateettgtggeetetgaeeeacetetggagageetagtteeettetggaggeagaagg caaagcttaggacctagagagtgctggaccacgccactcacaggaaccagcaggctgtgaggttgaaagcta ggcatatggagctttccaggctgggtgcagggcctcgtggcccttcccctcccctctgtgctctatagctca gtcttcccaggcggtgtgaacacgcagtgacatttccaggaatacagggatttattaatgatttcttgtgaa atgtttggaaatacaaagtactctataaatatttcataatagcattggggctgagaactccacaaagtgccg gaatacatttgcatgtaagacagaacgctgcctgggtcattgatgcctgttgagtggcagtcacagacactg cctagggtttctgactcacgctgttgggactgttctatgcagggcaccctcttgtgtggcataggatttgtg cctcaccacactgttgtagctttgctgtcttgatgatgagtagagggcagtgtccaggccatggtataag catctactgcccccagggttaccaaaaccaagccaagttgtgtctcagcgagctccgtgaagcatggagaa gttgagtactcagagacatgacgtgacttttcaaaggctgtaagctgacgagggacatagctagggttcaga cttgagtttttctttttcttttttttttttttttttaagactgagtcttgcttttgtcgcccaggctg gattgcagtggtgcttggctcactgcaacctctgcctcccgggttcaagcaattctcctgcctcagcctccc cagtagctgggattacaggcacctgccaccatgcctggccaacattttttgtatttttttagtagagatgggg tttcaccatqttqqccagqctqqtcttgaactcctqacctcaqgtgatccacccgcctcgacctcccaaagt actgggattacaggtgtgagccactgcacccggcccagactcgagtttttcatcttaatgctttttcattgc ctgacactttactgagaccaagatagggaacttcacatacagtaccttttctcccaaggcggaagagggctg ttcaatttctacactagagttcggggagttttagaaatgagtcagttatcgaggatgagagcagttcctgat aggctcaaccacaatgagatgtagctgttcagagaaagcattcttttatctataaactggaagataatcccg gtgaaacgaagcccagcccaggggcttcactaactccaggctgtgcttctcaaactttagtgagcatagga at cacctggg catcttg tgaag c tg tag at tt tgaat tc tgcagg tc gg cagagg gg tc tc agaat ccg catttccaacaatgtctccagtaatgctgatgctgctcgtccctggaccacagattgggtagccaggttctggcaa gctcatcccaaggctttgagatgacatcagacaaaatatgttctgggacatggcttttgagaggtcaagaaa ataagatgtttctttctcttctcatccccaacccttgcactgcccttttctccccttcccctacccttct tgtccccatccctgacgccagCTGTTCAGCATGAGAAGCTGGAGTGACATGCGACAGGAGGTGATGTTTCTG  ${\tt ACCAATGTGAACAGCTCCAGCTCCTCCACCCAAATCTACCAGGCTGTGTCTCGTATTGTCTGCGGGCATCCC}$ GAGGGAGGGGGCTGAAGATCAAGTCTCTCAACTGGTATGAGGACAACAACTACAAAGCCCTCTTTGGAGGC **AATGGCACTGAGGAAGATGCTGAAAACCTTCTATGACAACTCTACAA**gtgagtgtccatgcagaccccagccc atgtctacatgcccatttgcccaccagactgagctcttcctagaggagagaggcttctcttgaatagctacc tgacagccaaccttctggttttctgggggatgtggaagggtggcttccagggtgatcaagaatgagataatg gcagaaggacaaatcctgcaagatctcacttatatatggaatatatgtaaggtagaaagtgtcagtttcaca aaatttqctaaqaqaqtagatccgaagtgttcacactacacaaaaaaggcaactatgaggtgatggatttat taacagettgattgtggtgateettttacaaagtatacatatattaaaacateacattgtataeettaaata tatacaatttttatttgtcagttgtaactcaaaaaagctagaaaagcatttttaaaaaaggatgatgtactgg tcttaatattaccattgagataagctttataataacataaaaagaaataacagtaatgataatagcaacaac aacaacaacaaqaactaacatttaaqtagaatttcttgtqcactgtgcattctgtttaagttatctcattt taccctcatgataaccctgcagggaagattctttaaccccacatttcataggctcagagaggttaagtgcct tggttagagccacatcagagttaatccacaagagccaggattcaagcccaaatctgcctggatctgtgctct ctaagataactgttagtggtggcgtgtgttctcacactcagacatttgatctgccctttgtttcccattc ttagctgcaaggcagtgttaaagaaccctgtgtctccatatccactccccacacttaagcacttttgtgggc ccgtgtgccgtatgcctcgtggcagcagggatccaatgtcacagttttaggcagtggcatccttttccttga aaacttgatgcaggggaacctttctccatttccaaccacaggtgtgtczztttcagacactgagtgzaggca ggttttgtactttattgtaacacaagaaccttttcttctctggagtaaagcactccagacattcgcaagttg aaattotattatotttocagoatatagaagataottggtatotaaaaatoootgaaaaacttagaatgaatt tttaaaaatcagggatcctgctggataaccaaacccatttgtctgttacaacttttgtatttgggtttttgt  $\verb|cgttgcccaggctggagtgcagtggcgccatctcggctcactgcaagctccgcctcccgggttcacgccatt|\\$  $\verb|ttgtattttgagtagagacggggtttcactgtttagccaggatggtctcgatctcctgacctcgtgatccg|$ ttttttgggagacagagtttcgctcttgttgcccgggctagagtgcagtgacacaatctcggctcactgcaa cctctgcctcctgggttcaagcgattctcctgcctcagcctcatgcgtcaccacgcccagctaattttgtat



ttttagtagagacagggtttctccatgttggtcaggctggtctcgaactcccaacctcaggtggttcgcccg ccttggcctcccaaagtgctgggattgcaggcatgagccactgcgcccagccccaaattttggtttttgctt gaaaactgaggtctgaattcagccttctggttgcccctcaagagtcagtttaaatgttggtcatgttagttg tcagtgaaaacaatggtgaggctggcatgagagtgtgaatctggatgggagggcttgtgcttcatgaaaaca tcattctttatagatatctcagtttaatctgagataatcttctccacatctctccacatagatgttatgaat tttacttttacagaggagccaactgaggctcagataagttacttattatatgactagtagtggtagagctgg ggtttcaactaagaactctctggctccaaagcccttgtaagtttctatcagtatatgaccatgcatatgagc atttgtctctcctcttcatagCTCCTTACTGCAATGATTTGATGAAGAATTTGGAGTCTAGTCCTCTTT CCCGCATTATCTGGAAAGCTCTGAAGCCGCTGCTCGTTGGGAAGATCCTGTATACACCTGACACTCCAGCCA CAAGGCAGGTCATGGCTGAGgtaagctgccccagcccaagactccctccccagaatctccccagaactggg ggcaaaaaactcaaggtagcttcagaggtgtgcgctaagtatactcacggctcttctggaattcccagagtg aaaacctcaaqtctqatqcaqaccaqaqctqqqccaqctccccaqtcqtqqgtataqaatcataqttacaaq caggcatttcttggggatgggaggactggcacagggctgctgtgatggggtatcttttcagggaggagcca aacgctcattgtctgtgcttctcctcctttttctgcggtccctggctccccacctgactccagGTGAACAAG  ${\tt ACCTTCCAGGAACTGGCTGTTTCCATGATCTGGAAGGCATGTGGGAGGAACTCAGCCCCAAGATCTGGACC}$ TTCATGGAGAACAGCCAAGAAATGGACCTTGTCCGGgtgagtgtccctcccattattaccatgtgcctgctt  $\verb|ctgggggaatgtagtgagcatagctaaagtcacagggcaccacctctccagaagtacaggccatggtgcaga|\\$ gataacgctgtgcatatcagcatccatgccactcacggtcaaatagcagttttctgcaaaacttagtgaggg ctggtgtttggaagtggagttgagtaattgcagtaccctattttcctttttzgctgcagcctctcagccagc cacagcatctccctgtgtcttggtaggttttggaaagaagtgtgggagcaaaagcatgatgttacatgtaga ctggcctgagatactcattctcagggcactgtgtgaatgatgagctgctgttactgtgtggaggggaaatgc acttagtgcttcagagccacttgaaagggataagtgctctagagacaattgggttcaaatgtggagcaggct gagcaagaacagaatgtctcctttgcctgagcctgagtgctgttaatcacatcttcctgccttgggctgagt tagagaatcattagactatttcctgtttccatggtgaggggggcctcttccttttgtctctgctccccttaa gaagcaggtgaggattttgccaggtttcttgttttgaaccttattgactttaagggcggctgggttttagag actgtacctacctagggggaacacttccgaagtttaggactattccctgatccgctgggaggcaggttactg aggaagtccctttaaaaacaaaggagtttatactgagaaaagcataaacagtgatttgtatggattcacact gactaatatagctcatgccattaaagtggggtctcttctctaaaggagggttatatgatctagccccgtaga cctaagtgtggtttcagacctgttcttcctggtcctctccttggaatccatatttctactagttggactttt tetgtttgtetggeteteagaggattataggaggeeetgtgaagtgaeteagtgaattttgatttgtgggea agtagatggttccctagtctgaaattgactttgccttaggtgcttcaattcttcataagctcccagttctta aaggacaagatccttgtaaacatggcaatggcattcattaggaatctagctgggaaaatccagtgtgtatgc ttggaaatgagggatctggggctggagagaaaggcatgggcatgccttggagggacttgtgtcaagctga ggacctttactttaagctctaggggaccaggcaaggggagatgtagatacgttactctgatggggtggatga attgaagaaggatgaggcaagaatgaaggcagagaccagggaggaggctctccaagtggccaaggcataaag tttctagctgggtgggtagcgatgtccagtaggccagtggctactgaggtctgcagtggaggagggtgg aatgcagtggcatgatcttggctcaccacagcctccgcctcctgggttcaagcaattctcctgtctcagcct ccagagtagctgggattacaggcacatatcactgtgcccggctaatttttgtattttcagtggagatgggat ttcaccatgttggtcgggctggaatgaactcctgacctcaagtgatccacctgcctcagcctcccaaagtgt aacatgagcttgtcaccccctgtagcctggcatctcctacacgaggtgatggctgaggcttctgcttctgct ggggtagctctgatctttctgctttctctggcactgtctacccatgttgcctcaccccacaggtcccagggc acctctctcgggcaagtcttggaaccctctgacactgatttgctctcttttctgagctgcttttagccaccc atectegggaeetgttttetetetgeeteeaeeeetgegggeagtettaggteteetgeeeeteaegageae cccagagaggccacgtgctcagtgatctcagtgggcgcatctttctagtctttgctattctttttggccatgt tccaaataaagtggcttcagaattgctaaccctagcctctgtgaacttgtgaggtacaattttgtgtctgtt atgttaacaaaaatacataccttcctggtgatggtataaattgctattctctattggaaagcaatttg tagcctactgaaataattttaaagaagtcaccatatgagagaaaatgttattgctatattgttattgtgaga atgctgccattgaaataataaatacaaaggcgcaagggggaaaagcttataatgttagtgaaactaagact

gatttttttataaagcagcagttttcagacccttggagactccaattcggtagaaccagagcttcatcttct ctgtcgaagctgtgacaggagttgcaaatgcctctctttttgctgagtttgcagctgctgtttttccggca gcacatctgtgcaggcctctgcctcggcccctctggzatctgctgattgagcagcggattgatctgtccttc tetttegtgttgacccatgtgaggaaccaactggcaagggazacaagaaatggaaataggcctcetttgcat catgacctgtacatcctgcaattggaaaagattgtactttagttggtttaaccagcagcattatttttctaa actaagcagtaagaaggaattaggttttatgtgggatcaacagactgggtctcaaaagaggaaggtgataga acacagtggggagggggaggtgcactagaaacagagggcctatgctttcattctggctttgctacttaatag ctgtgtgacccaatcttagagacttaacctctctgaacttccattttctcatgtataaaatgggaaatatta aaggatactcactgggctggtggcttgtgcctgtaatcccagcacttggggaggttgaggtgggaggatcac ttgagcccaggtgttcaagaccagcccaggcaacatggcaagactctgtctctatgaaaaaattaaaaatta gccaggtgtggtggtgtgcacctgtagtcttagctacttggtaggctgagatgggaggatcacttgggcttg ggaggtcaaggctgcggtgagctgtgattccatcactgcactccagcccgggcggcagagcgagacactgaa tccaaacgacaacaacaacaaaggcaaaaaataaaagtgccctctttatggagttgtgtaaggtgaagca tatacactattcaacatagtaactatataaaggaagtattgttgttgttactgtagttaataccattaagtg agatgtttcgtatagtggaaagcacatggactctgaattcagactggtctgactttgagtctcagctccaca aaaatagggacactgtcatttacctcagttttctgtgaggataaaacaacgacagtgtatatgcaagtattt  ${ t tgtaaattttgtagtgctcctcaagatttagttggtgtttactacttgtactttctcactggaatggcag{ t AT}$ GCTGTTGGACAGCAGGACAATGACCACTTTTGGGAACAGCAGTTGGATGGCTTAGATTGGACAGCCCAAGA CATCGTGGCGTTTTTGGCCAAGCACCCAGAGGATGTCCAGTCCAGTAATGGTTCTGTGTACACCTGGAGAGA AGCTTTCAACGAGACTAACCAGGCAATCCGGACCATATCTCGCTTCATGGAGgtgaatctgttgctgggatc ataatgtatagtctcatttacaaaactatccctcaagcctaacacaggatttgataacaaaaggcacttaat aaatgttagttgagtggttgaatgagtaaataaactctagctttagtaaattaactctagcttattctatat aggctcaagagaatatttctacccattttcttctaggttttcctatctcagtgactaatggtagcaaagcat tcccttaaaaaggcattatttgtgaaacttatctaaaatcgaattcgggtccaattaaatttttgaaatttt cagaattgctaagaaaacagaaaagtaagataagatcattgttttaacctcttttcctccacaaaatcaata aataacatatccctaaattactcttagaatttctcttaaattgcagtgaaaaaccaaaatccttcattcttg gttgaaggttggaaaactacgttagagaggattagagaggatgagcaatcgtgtagtcagcccttgcc tcctagtgtaggatttgtctcagccactgcttgttgtcctggctgccaacgttctcatgaaggctgttcttc tatcagTGTGTCAACCTGAACAAGCTAGAACCCATAGCAACAGAAGTCTGGCTCATCAACAAGTCCATGGAG CTGCTGGATGAGAGGAAGTTCTGGGCTGGTATTGTGTTCACTGGAATTACTCCAGGCAGCATTGAGCTGCCC CATCATGTCAAGTACAAGATCCGAATGGACATTGACAATGTGGAGAGACAAATAAAATCAAGGATGGGtaa  $\tt gtggaatcccatcaccaccagcctggtcttggggaggtccagagcacctattatattaggacaagaggtactt$ tattttaactaaaaatttggtagaaatttcaacaacaacaaaaaaactcaacttggtgtcatgattttggtg aaattggtacatgacttgctggaaggtttttcataggtcataaaataacagtatcttttgatttagcatttc aggagaattgcttgaacccaggaggcagaggttgcagtgagctaagatcgcatcattgcactcccgcctggg caataagagtgaaactccatctcaaaaaaaaaaaagatacaaaaatagaaaaaggggcttggtaagggtag tggtttggttttagGTACTGGGACCCTGGTCCTCGAGCTGACCCCTTTGAGGACATGCGGTACGTCTGGGGG GGCTTCGCCTACTTGCAGGATGTGGTGGAGCAGGCAATCATCAGGGTGCTGACGGGCACCGAGAAAAACT GGTGTCTATATGCAACAGATGCCCTATCCCTGTTACGTTGATGACATgtaagttacctgcaagccactgttt gagtetegetetgaegeecaggetggagtgeagtggetegateteggeteactgeaacetttgeeteeeggg ttcaagctattctcctgcctcagcctccacagtagctgggactacaggctcatgctgccacgcccggctgac tttttgtattttagtagagacgaggtttcaccatgttacccaggctagacttcaactcctgagctcaggcaa tccaccctccttggcctcccaaagtgctgggattacaggtgtgagccactgcacccagcccacctttaat tttttacactctacccttttggtcaaaatttgctcaatctgcaagcttaaaatgtgtcatgacaaacacatg caagcacatactcacacatagatgcagaaacagcgtctaaacttataaaagcacagtttatgtaaatgtgtg tagactttttagaaaatctttcagtgctgagtcactaagctgccaagttctcattgtgggaactatgccttt ggatgtaatgatttcttctaagacaatgggcggaggtgtagttattgcagacatctgaaatatgtaatgttt   $\tt gtgtgtgtgtgtgtgtgtgtagggatcaggatgcgggaggagctgggttctgcttgtattggttctctgttt$ tgcattgaatagtgttttccttgtatggctatctatagcttttcaaggtcaccagaaattatcctgttttt $\verb|caccttctaaacaattagctggaatttttcaaaggaagacttttacaaagacccctaagctaaggtttactc|$ tagaaaggatgtcttaagacagggcacaggagttcagaggcattaagagctggtgcctgttgtcatgtagtg  ${\tt agtatgtgcctacatggtaaagctttgacgtgaacctcaagttcagggtccaaaatctgtgtgcctttttac}$ gtggtgtgattagagttacgataagcaagtcaatagtgagatgaccttggagatgttgaacttttgtgagag  ${\tt aatgagttgttttttgttttggtttttagtactttaacataatctacctttagttttaagtatcgctcacag}$  $\verb|ttacctag| ttactga agca agccccca aagaa at ttggtttggca acactttgttagcctcgtttttctctc| \\$  ${\tt tacattgcattgctcgtgaagcattggatcatacgtacatttcagagtctagagggcctgtccttctgtggc}$  $\verb|ccagatgtggtgctccctctagcatgcaggctcagaggccttggcccatcaccctggctcacgtgtgtcttt|\\$  $\verb|cttctcccttgtccttccttggggcctccag| \textbf{CTTTCTGCGGGTGATGAGCCGGTCAATGCCCCTCTTCAT}|$  ${\tt GACGCTGGCCTGGATTTACTCAGTGGCTGTGATCATCAAGGGCATCGTGTATGAGAAGGAGGCACGGCTGAA}$  ${\tt AGAGACCATGCGGATCATGGGCCTGGACAACAGCATCCTCTGGTTTAGCTGGTTCATTAGTAGCCTCATTCC}$ TCTTCTTGTGAGCGCTGGCCTGCTAGTGGTCATCCTGAAG gtaaggcagcctcactcgctcttccctgccagggggtcatacctgtcatttcctgcaatttcatccatttatagttggggaaagtgaggcccagagaggggcag tgacttgcccaaggtcaacccagccgggtagcagctaagtaggatgagagtgcagggttcatgctttccaga aggttagactgtctggaagcagaggctgaaatagagtttgatgtatgggtatttatgagggctcaataccta ggcactctagagaatatgcagcttgttggagttgttcttcatcgagctgaaacatccagccctttgtgctcc aggtcgtgccccagggcctacatggctctctgctgctgtgacaaacccagagttgctgatgcctgaggccgt  $\verb|ctactgacagcttgggcaacaaggcttccctgaatggggactctgggcagtgcagttttgtgtctgaaccata|\\$ cattaatatatttatatccgaattttctttctctgcaagcatttcatataaagacacatcaggtaaaaataa atagttcctactgattgccaaggactgtttaaacacatcacatgggcttcttcttctatcctcactaaccct tttaacagacaaggaaatgaggctcaggaaggtcaaggactttattgaggttccacagtaggatacagttct tgctaaaagcaacccctccctcatgctctgttatctaactgcaaggggaaggtcagtggcagaggtagtggt cccatggttggtgcataagagctgctctgagacaactgcatgctggtgggtcctgcagacatgtacccatca gccggagataggctcaaaatatccacaagagtttggatgattgtgggaatgcagaatccatggtgatcaaga gggaaagtcaagttgcctggccattttccttggcttttagacagaaaagttacgtgggatattatctcccac agctcttctgtggtgccaccagtcatagtccttatataaggagaaaccagttgaaattacctattgaagaaa caaagagcaaactcgcccactgaaatgcgtagaaagccctggactctgttgtattcataactctgccattat ttttctgcgtagttttgggtaagtcacttatcttctttaggatggtaatgatcagttgcctcatcagaaaga tgaacagcattacgcctctgcattgtctctaacatgagtaggaataaaccctgtcttttttctgtagatcat GCCCTACAGTGATCCCAGCGTGGTGTTTGTCTTCCTGTCCGTGTTTGCTGTGGTGACAATCCTGCAGTGCTT CCTGATTAGCACACTCTTCTCCAGAGCCAACCTGGCAGCAGCCTGTGGGGGGCATCATCTACTTCACGCTGTA CCTGCCCTACGTCCTGTGTGGGCATGGCAGGACTACGTGGGCTTCACACTCAAGATCTTCGCT gaacagaagatgattgtcttttccaatgggacatgaaccttzagctctagattctaagctctttaagggtaa gggcaagcattgtgttttattaaattgtttacctttagtcttctcagtgaatcctggttgaattgaattgaa  ${\tt tggaatttttccgagagccagactgcatcttgaactgggctggggataaatggcattgaggaatggcttcag}$  $\tt gcaacagatgccatctctgccctttatctcccagctctgttggctatgttaagctcatgacaaagccaaggc$  $\verb|cacaaatagaactgaaaactcttgatgtcagaagatgacctctcttgtcttccttgtgtccagtatggtgttt|\\$ tgcttgagtaatgttttctgaactaagcacaactgaggagcaggtgcctcatcccacaaattcctgacttgg acacttccttccctcgtacagagcagggggatatcttggagagtgtgtgagcccctacaagtgcaagttgtc agatgtccccaggtcacttatcaggaaagctaagagtgactcataggatgctcctgttgcctcagtctgggc ttcataggcatcagcagccccaaacaggcacctctgatcctgagccatccttggctgagcagggagcctcag aagactgtgggtatgcgcatgtgtgtgggggaacaggattgctgagccttggggcatctttggaaacataaa gttttaaaagttttatgcttcactgtatatgcatttctgaaatgtttgtatataatgagtggttacaaatgg aatcattttatatgttacttggtagcccaccactzccctaaagggactctataggtaaatactacttctgca ccttatgattgatccattttgcaaattcaaatttctccaggtataatttacactagaagagatagaaaaatg agactgaccaggaaatggataggtgactttgcctgtttctcacagAGCCTGCTGTCTCCTGTGGCTTTTGGG TTTGGCTGTGAGTACTTTGCCCTTTTTGAGGAGCAGGGCATTGGAGTGCAGTGGGACAACCTGTTTGAGAGT CCTGTGGAGGAAGATGGCTTCAATCTCACCACTTCGGTCTCCATGATGCTGTTTGACACCTTCCTCTATGGG GTGATGACCTGGTACATTGAGGCTGTCTTTCCAGgtacactgctttgggcatctgtttggaaaatatgactt ctagctgatgtcctttctttgtgctagaatctctgcagtgcatgggcttccctgggaagtggtttgggctat agatctatagtaaacagatagtccaaggacaggcagctgatgctgaaagtacaattgtcactacttgtacag cacttgtttcttgaaaactgtgtgccaggcagcatzgcaaaatgttttatacacattgcttcatttaattct cacaaggcztactzctgaagtagttactataataaccagcaattttcaaatgagagaactgtgactcaaaga cqttaaqtaaccaqctttqqtcacacaactqttaaatqttqqtacqtqqaqqtqaatccacttcqqttacac tqqqtcaataaqcccaqqcqaatcctcccaatqctcacccaattctqtatttctqtqtcctcaqaqqqqqta ttcttqaccaaqtccaaqaqqaacctqcqttqqacaqttttcatatqaqatcaaattctqaqaqaqcaaqat aacttctttcattqaatatqcaattttqcaqcatqcaqattctqqatttaaattctqaqtcttaacttactq gctqagqqaccttqqatagqctccttatccctcaqtttcctcatctctaaaatgqgqatgqcacctgccccq tgggttgttggaaggacttacagaggtgcagaatgtacgttgtacatagcaggtttcagcaaatgttagctc ggaaaccctcagaatactgggatgatgctgagcttggctcatacctgtgctttgctttcagGCCAGTACGGA ATTCCCAGGCCCTGGTATTTTCCTTGCACCAAGTCCTACTGGTTTGGCGAGGAAAGTGATGAGAAGACCAC CCTGGTTCCAACCAGAAGAGAATATCAGAAAqtaaqtqctqttqacctcctqctctttctttaacctagtqc tgctgcctctgctaactgttgggggcaagcgatgtctcctgcctttctaaaagactgtgaaaccactccagg ggcagagaaatcacatgcagtgtccctttccaaatcctcccatgccatttatgtccaatgctgttgacctat tgggagttcacggtctcgatccctgagggacattttctttgttgtcttggcttctagaagagtatcttttac ttqcccctcccaaacacatttcatqqtctcctaacaaqctaqaaqaaqqqtaaaqacaaqcqtgatt tggctaccacagagctcagcctatgcttcataatgtaatcattacccagatccctaatcctctcttggctct taactgcagacagagatgtccacagctcatcaaaggctctgccttctgggttctttgtgcttagagtggctt cctaaatatttaataggtcccttttctgccagtctcttctgtqcccatcccctgattgcccttggtaaaagt atgatgececttagtgtageacgettgeetgetgtteetaateatetteteetaeeteetetttaeacetag ctcctgtttcagtcacctagaaatgctcacagtcgctggaatatgtcatgttcttccacacctccatgcctt tgtaggtactgtttgctctcacaggagaactttctctctaacttgcctatcttctcaactcctcctttctct ccaaqatctaqttccqqatcccctccctqaqcatccctccttgqttctcaggtagtcagtcactctctgcc ctgaacttccatggcacgtgaaagaaatctttttattttaaaacaattacagactcacaagaagtaataca aattacatqaqqqqqttcccttaaacctttcatccaqtttccccaatggtagcagcatgtgtaactgtagaa tagtatcaaaaccatgaaattgacataggtacaattcacaaaccttcttcagatttcactagctttatgtgc qctcatttqtqtqtqtqtqtqcqtatttaqttctatqcaattttatcatqtqtqaattcatqtaattactaq ctcaqtcaaqctqcaqaaatatctcattqtcacaaaqctccttcatqctaccccttaaztqqccaczaqccz acctcccttcttcctcaqttcctqacacctqtcaaccactaatqcqttcctcqttttttacaqttttattatt agcagtattcccttagatctatccaagttqtqtqtqtcaacagttcattcctcttcactgctgagtagtgtt ccctqqqaqqqqtqtatcacaqttccatqqcatttttaqatqtatttttaaacagctttcagcatcctcta ttttaattgttcatcaagtcctttttcccaatagactctgaatgctcctttatcatcgtattcccatcacca tqqqttcatttctqtcttctctctqtcacaq**TCTGCATGGAGGAGCACCCACTTGAAGCTGGGCGT** GTCCATTCAGAACCTGGTAAAAGTCTACCGAGATGGGATGAAGGTGGCTGTCGATGGCCTGGCACTGAATTT TTATGAGGGCCAGATCACCTCCTTCCTGGGCCACAATGGAGCGGGGAAGACGACCACCATgtaagaagagg tgtggttcccqcaqaatcagccacaggagggttctgcagtagagttagaaatttataccttaggaaaccatg ctgatccctgggccaagggaaggagcacatgaggagttgccgaatgtgaacatgttatctaatcatgagtgt ctttccacgtgctagtttgctagatgttatttcttcagcctaaaacaagctggggcctcagatgacctttcc ggagttggtaattcccaggaactctgtctctaagcagatgtgagaagcacctgtgagacgcaatcaagctgg qcaqctqqcttqattqccttccctqcqacctcaaqqaccttacaqtqqqtaqtatcaggaggggtcaggggc tgtaaagcaccagcgttagcctcagtggcttccagcacgattcctcaaccattctaaccattccaaagggta tatctttggggggtgacattcttttcctgttttctttttaatcttttttaaaacatagaattaatatta tgagcttttcagaagatttttaaaaggcagtcagaaatcctactacctaacacaaaaattgtttttatcttt gaataatatgttettgtttgteeatttteeatgeatgegatgttaggeataeaaaataeattttttaaagaa

tactttcattgcaaattggaaacttcgtttaaaaaatgctcatactaaaattggcatttctaacccataggc gaatggggggggtgggagggttggtgttctgttctctctgcagactgaatggagcatctagagttaagggta ggtcaaccctgacttctgtacttctaaatttttgtcctcagGTCAATCCTGACCGGGTTGTTCCCCCCGACC TCGGGCACCGCCTACATCCTGGGAAAAGACATTCGCTCTGAGATGAGCACCATCCGGCAGAACCTGGGGGTC TGTCCCCAGCATAACGTGCTGTTTGACATgtgagtaccagcagcacgttaagaataggccttttctggatgt tttcttttttattttttgagatggagtctcgctctgtagccaggctggactgtagtggcgcgatctcggct cactgcaaccttggcctcccaggttcaagcgattctcctgcctcagcctcccgagtagctgggactctaggc acacaccaccatgcccagctaatttttgtgttttttagtagagacggggtttcaccatgttggccaggatggt ctcaatgtcttgacctcgtgatccgcccacctcggtctcccaaagtgctgggaacacaggcatgagccactg tgtctggccacattttactttctttgaatatggcaggctcacctccgtgaacaccttgagacctagttgttc gcttgggaaacattgcttcccattattgtcatgctggagggccctttagcccatcctctccccccgccaccc tccttattgaggcctggagcagacttcccagacctggtagtgcttcagggccctggtatgatggacctatat ttgctgcttaagacatttgctcccactcaggttgtcccatcagccataaggcccccagggagcccgtgtgat ggagcagagagagacctgagctctgcaatcttgggcaaggcttttcccttatgtttcttcttatctaaagtg aacagctggggctcatgtgctccctcctcatctaaagtgaacacatggggctcatgtgcagggtcctccccg ctttcagagcctgaggtcccctgaggctcaggaaggctgctccaggtgagtgccgagctgacttcttggtgg acgtgctgtggggacagcccattaaagaccacatcttggggccctgaaattgaaagttgtaactgcctggtg  $\verb|catggtggccaggcctgctggaaacaggttggaagcgatctgtcacctttcactttgatttcctgagcagct|\\$ catgtggttgctcactgttgttctaccttgaatcttgaagattatttttcagaaattgataaagttatttta aaaagcacggggagagaaaaatatgcccattctcatctgttctgggccaggggacactgtattctggggtat ccagtagggcccagagctgacctgcccctgtccccagGCTGACTGTCGAAGAACACATCTGGTTCTATGC CCGCTTGAAAGGGCTCTCTGAGAAGCACGTGAAGGCGGAGATGGACCAGATGGCCCTGGATGTTTGCC ATCAAGCAAGCTGAAAAGCAAAACAAGCCAGCTGTCAGgtgcggcccagagctaccttccctatccctctcc cctcctcctccggctacacacatgcggaggaaaatcagcactgccccagggtcccaggctgggtgcggttgg tttqtcttqctctqtttttttqtaqGTGGAATGCAGAGAAAGCTATCTGTGGCCTTGGCCTTTGTCGGGGGGA TCTAAGGTTGTCATTCTGGATGAACCCACAGCTGGTGTGGACCCTTACTCCCGCAGGGGAATATGGGAGCTG tttgagaagtgtggctgtatctcatggctaggcttctgtgaagccatgggatactcttctgttakcacagaa gagataaagggcattgagactgagattcctgagaggagatgctgtgtctttattcatctttttgtccccaac tggcztggccctgagacattgggaaagtcacaacttgcctcaccttctttgccgataataatagtggtgczt tacctcatagaggattaaattaaatgagaatgcacacaaaccacctagcacaatgcctggcatatagcaagt taqqqrtcataqccatacaqqqtgaaaggtqgcttccaggtctcttccagtgcttacccctgctaatatctc  $\verb|tctagtccctgtcactgtgacaaatcagaactgagaggcctcacctgtcccacatccttgtgtttgtgcctg|$ gcagGCCGCACCATTATTCTCTCTACACACCACATGGATGAAGCGGACGTCCTGGGGGGACAGGATTGCCATC ATCTCCCATGGGAAGCTGTGTGTGTGGGCTCCTCCCTGTTTCTGAAGAACCAGCTGGGAACAGGCTACTAC CTGACCTTGGTCAAGAAAGATGTGGAATCCTCCCTCAGTTCCTGCAGAAACAGTAGTAGCACTGTGTCATAC aatgatttctccatctccacccttttgccatgttgaaaccaccatctccctgctctgttgcccctttgaaa t catat catact taagg catggaaag ctaagg gg coctot g ctoccatt g t g ctagt to t g t t g a a tocog t consider a grant of the consideral consideration of the consideral consideration of the consideral consideration of the ctttccttttcctatgaggcacagagagtgatggagaaggtccttagaggacattattatgtcaaagaaaaga gacttgtcaagaggtaagagccttggctazcaaatgacctggtzgttcctgctcattacttttcaatctcat agggaagtgaggcttgtagggaattggtagctgattcaaggtcacccagcaggtaaataacagtggtgggacagtggtacctaatgtatttacatcccaacctgaaactcctatccacttatttaccttttaatgagcctctta actcaaqtqcaqtctqagqaccaqcaqcatcaqgatcacttgggaacttgttagaaattcagcaacctgggc ccagctcagacctaccgaatcagaatctgtgcattttaacaaggttcttgagtggttgaacacacattaaag  $\verb|catgagaag| cattgaactagacatgtagccaggtaaaggccttgcctgagatggttggcaaaggcctcattg| \\$ 

cagcattcattggcaggccacagttcttttggcagctctgcttcctgacctttcaccctcaggaagcgaggc tgttcacacggcacacacatgccagacagggtcctctgaagccacggctgccagtgcatgtgtcccagggaa agctttttcctttagttctcacacaacagagcttcttggaagccctccccggcgaaggtgctggtggctctg ccttgctccgtccctgacccgttctcacctccttctttgccatcagGAGGACAGTGTTTCTCAGAGCAGTTC TGATGCTGGCCTGGGCAGCGACCATGAGAGTGACACGCTGACCATCGgtaaggactctggggtttcttattc tgactcaaggtttgctgctgggctggggctgggtggctgcgggkgtgggagcagcttggtggcgggttggcc taatgcttgctggggtgcctggggctcggtttgggagctagcagggcagtgtcccagagagctgagatgatt ggggtttggggaatcccttaggggagtggacactgaataccagggatgaggagctgaggccaagccaggag  $\verb|ggtgggatttgagcttagtacataagaagagtgagagcccaggagatgaggaacagccttccagatttttct|\\$ tgggtagcgtgtgtaggaggccagtgtcaccagtagcatatgtggaacagaagtcttgacccttgctatctc  ${\tt tgcctagtcctaatggctggcttttcccaggaaggcttctgcttccatggactgttagattaaccctttatt}$ taggtaaatgagggaacctactttataagcataggaaagggtgaagaatcttttaagattcctttactcaag  $\verb|tttctttgaagaatcccagagcttaggcaatagacaccagactttgagcctcagttatccattcacccat|\\$ ccacccacccacccatccttccatcctccatcctcccattcacccatccacccatccagctgtccac ccattctacactgagtacctataatgtgcctggctttggtgatacaaaggtgaataagacatagtcctttcc tttgcccccaaccctcagaccagagatgaacatgtggaatgacctaaacacctggaacaggtgtggtgtatg  $\verb|catctttgcattctggtccctgcag| \textbf{ATGTCTCTGCTATCTCCAACCTCATCAGGAAGCATGTGTCTGAAGCCCC}|$  $\tt GTGGAACTCTTTCATGAGATTGATGACCGGCTCTCAGACCTGGGCATTTCTAGTTATGGCATCTCAGAGACG$  ${\tt ACCCTGGAAGAA} \texttt{g} \texttt{taagttgactgactgtcggaatatatagcaaggccaaatgtcctaaggccagacc}$ agtagcctgcattgggagcaggattatcatggagttagtcattgagtttttaggtcatcgacatctgattaa  ${\tt tgttggccccagtgagccatttaagatggtagtgggagatagcaggaaagaagtgttttcctctgtaccaca}$ gtacatgcctgagatttgtgtgttgaaaccagtggtacctaacacatttacatcccaaccttaaactcctat gcacttatttaccctttaatgagcctctttacttaagtacagtgkgaggaacagcggcatcaggatcacttg ggaacttgttagaaattcagcaacttgggcccagctcagacctactgaatcagaatcaggagcaattctctg aattctcaaaaaaagatgaaaaaatgaacactcaggaatgctgacatgagattcagaatcaggggtttgggg  $\verb|cttcaaagtccatcctctttatccatgtaatgcctccccttagagatacaacatcacagaccttgaaggc|\\$ tgaaggggatataaaagctgtctggccaagtggtctccaagcttgacagtgcagcagaatcacctggggata ttattaaaaataatactaaggtttggcttcagggcctgtgaatcagaatttctggaggtgaggccttga  ${\tt agtctgtatttctattgcatactttggacacagtggtctatagactagagtttggaaatgattgcgctcatt}$  $\verb|cagattctcttctg| at \verb|gtttgaattgctgccatcatatttctagtgctctatttcctcctgctcattctgtc| \\$  $\verb|ttggataacttatcatagtactagcctactcaaagatttagagccacagtcctgaaagaagccacttgactc|$  $\verb|tttgatgagactggagttttgctcttattgcccaagctggagtgcagtggtgcgattttggctcactgcaac|$ ctccacctcccaggttcaagcgattctcctgcctcagcctcccaagtagctgagattacaagcatgtgctac cacgcccagctaattttgtatttttagtagagatgggttttatccatgttggtcaggctggtctcgagctcc agacctcaggtgatctgcccgcctcggcctcccaaagtgctgggattataggcctgagccacagcgctcagc cataactttaatttgaaaatgattgtctagcttgatagctctcaccactgaggaaatgttctctggcaaaaa cggcttctctcccaggtaactctgagaaagtgttattaagaaatgtggcttctactttctctgtcttacggg  $\tt gctaacatgccactcagtaatataataatcgtggcagtggtgactactctcgtaatgttggtgcttataatg$ ttctcatctctctcattttccagATATTCCTCAAGGTGGCCGAAGAGAGTGGGGTGGATGCTGAGACCTCAG gtaactgccttgagggagaatggcacacttaagatagtgccttctgctggctttctcagtgcacgagtattg ttcctttccctttgaattgttctattgcattctcatttgtagagtgtaggtttgttgcagatggggaaggtt tgttttgttgtaaataaaataaagtatgggattctttccttgtgccttcagATGGTACCTTGCCAGCAAGAC GAAACAGGCGGGCCTTCGGGGACAAGCAGAGCTGTCTTCGCCCGTTCACTGAAGATGATGCTGCTGATCCAA ATGATTCTGACATAGACCCAGgtctgttagggcaagatcaaacagtgtcctactgtttgaatgtgaaattct ctctcatgctctcacctgttttctttggatggcctttagccaaggtgatagatccctacagagtccaaagag aagtgaggaaatggtaaaagccacttgttctttgcagcatcgtgcatgtgatcaaacctgaaagagcctatc tttgaaagagtcagaaaggggaatttgctgttagagttaattgtaccctaagacttagatatttgaggctgg gcatggtggctcatgccagtaatcccagcgctttgagaggctgaggtgggtagatcacctgaggtcaggagt  $\verb|ttgagaccagtctgaccaacaaggtgaaaccccgtctctactaaatacaaaaattagccgagtgtggc|$ 

acatgcctgtcatcccagctacttgggaggctgaggcaggagaatcgcttgaacccaggaggcagaggttgc agtcagccacggttgcgccattgcactccagactgggcaacaagagtgaaaactccatctcaaaaaagaaaa aaaaagaattagatattttggatgagtgtctttgtgtgtttaactgagatggagaggagagctaagacat caaacaaatattgttaagatgtaaaagcacatcagttaggtatcattagtttaggacaaggatttctagaaa atttttaggaacagaaaactttccagttctctcacccctgctcaaagagtgtatggctcttacattatatat aactgcctgacttcatacagtatcagtacttagatcatttgaaatgtgtccacgttttaccaaaatataata gggtgagaagctgagatgctaattgccattgtgtattctcaaatatgtcaagctacgtacatggcctgtttc tgctactgttagacatttttgagtcaagcttttccttggacatagctttgtcatgaaagccctttacttctga gaaacttctagcttcagacacatgccttcaagatagttgttgaagacaccagaagaagaggcatggcaatgc cgaaaacacctaagataataggtgaccttcagtgttggcttcttgcagAATCCAGAGAGACAGACTTGCTCA GTGGGATGGATGGCAAAGGGTCCTACCAGGTGAAAGGCTGGAAACTTACACAGCAACAGTTTGTGGCCCTTT TGTGGAAGAGACTGCTAATTGCCAGACGGAGTCGGAAAGGATTTTTTGCTCAGgtgagacgtgctgttttcg ccagagactctggcttcatgggttgggctgcaggctctgtgaccagtgaaggcaggatagcatcctggtcaag atatggatgccggagccagatttatctgtatttcaatcccagttctattccttgccagttgtgtatccgctg gcaagttacttctctatgcctcaatctcctcatctgtaaaatggggataataatattacctgcaatacaggg ttgttacgaaaataaaaatgaataggtgcttagaatggggcctgacattagtaagtgcttagttttgtgtgt gtatatqttatttttattttggaggagaacataaaaaggacaaagtgtagaaaaactggttgggtgtattca gctgtcataacatgagagttgttatgcccagatgcacttgacatgtgaatttattagaaacatgatttttct ctgagttgatgtttaactcaaactgatagaaaagataggtcagaatatagttggccaacagagaagacttgt taaaatcaagaaatatagagaaaaggtctgcagagagtctttcatttgatgatgtggatattgttaagagcg ggagtttggagcatacagagctcaagttgaatcctgactttgctacttattggctatatgaccttgggcaag tgacaacatagagatagttctcattatagtagttgttatacagaattattcactcaatgttaattttctgca ttgaaatcccagaacattagaattgggggcattatttgaatctttaaggttataaggaatacatttctcagc atggttgtccatgattggagccgttgctgtagagttggttttattatagtgtaggatttgaatgggccatgt gttctcagacctcagattaaaawgagaaaactgaggccagtggggagcgtgacttcacatgggtacacttgt gctagagacagaaccaggattcaggacttctggctcctggtcctgggttcatggcccaatgtagtctttctc agtcttcaggaggaggaaggcaggacccagtgttctgagtcaccctgaatgtgagcactatttacttcgtg aacttottggottagtgoctotgocaggtggocataacototggoottgtgttgccagagaaaaggtttagt tttcaqqctccattqcttcccaqctqccaaqaatqccttqqtqcaqcacagtcataggccctgcattcctca ttgccgtgctggttggtcggggggggggggctggactcgtagggatttgccccttggccttgtttctaacact tgccgtttcctgctgtccccctgcccctccactgcctgggtaaagATTGTCTTGCCAGCTGTTTTGTCTG CATTGCCCTTGTGTTCAGCCTGATCGTGCCACCCTTTGGCAAGTACCCCAGCCTGGAACTTCAGCCCTGGAT GTACAACGAACAGTACACATTTGTCAGgtatgtttgtcttctacatcccaggagggggtaagattcgagcag ctcaggtccctgtataagctaatactgcatgcatagaacagcagcgaactaaccctgaataataggccagtc ttetgttgageettteageeteteteetetteateetactgttgteaggaacageeacatgtgttttaggtg aaataatccacccttgcaaaaatccatgattaagttataaaatatttggatttgtggagctgtgttttaatt  $\verb|ctgtaactgagtcacagggcacactgtcaaagcatagaacctccagagacttgtttctgcaaagtataatt|\\$ cactctgtaacaatacattaaatcaaagaaaaggacaaaggatttttctgggtcttgttagcaggagctttc ttcagtcctgaaagatttgtagacctgtagatgggggaactgtgtcagtgatacaaaagggaagcatttaaa cattttzcttcttacatagttcaggtttactttattttttcctttccggctgctgaccctgtattgcccgta tacaaagttttcttgccctttcttggaaaatcctgcttgtctgtgccaaagggataattgtgaaagcacttt gtacacatacacacctttatacatacageccatttaaaacaagetecaetttggagtgetetaegteaeeet gatgccgaatacagggccagagtctgagatccttctgggtggtttctgtgtttttgttcatttctgttttaag agcctgtcacagagaaatgcttcctaaaatgtttaatttataaaaacatttttatctctcgattactggttt ta at gaat tacta agct ggct gcctct cat gtaccca cag CAATGATGCTCCTGAGGACACGGGAACCCTGG

tgccactttagccataagcagggcttcttgtgcttgttgcctggtttgatttctaatatgctgcatttatca ggtagtaaccgaactaaattatctaggaacaaacgtttggagagtcttctaacaccgtgcaaagcacgtcat tacagacatttgtttactgatttagaaccttaatatttaatttaatatazgcactttacacttactgatgaaa aggttttgcttatcagcttcttcgcttttataatctgaaaagatggcatatgaatttttataaaaagggaca ctttcttcttctcaaattgtatatttttattgtactttccttcaaaacccccttttaaaaagtaagcagtgg tgagtgaagatggtgagaggtcattatgaggccgtgctcaaggctggtagaggtgggttagtgtttccaggtttaggcagaatctcagctgaggtcatgaaacaacagtgatctctgaaaaattatggcaaggtggga aggtgctggagaattggagaggggcaaacttgactttcaagtttcaatgggaagataggtgactctgcaca  $\verb|ccacag| a a cagtgag catgata a cctgtttata caaggttctag ag cagatttcta a atggatag ctactgt|$ gtgcttgtttgttcttaattagtattggatagttactaaatacttgttagtacttagtacataatgggtggt aaatcctagcagctaatattggttcccaaataaccagatgacaaggatagagaaggacacagacacggccta tctggatttcatggtgcctttgattttccacatgaaggttgtgtgtagggaagatagaagcatgagatgagatg ataatatagttatctggattcatcactggccagctgaaccatatgaactcatggattgatgctagcttagga gcatgtctcagctgtatttaaatttgtctcagccaatccccttttgaatgttcagagtgtaagcttcaggag ggcagcgcgtcttagtgtgacttttctggtcagttcaggtgctttaaggagacaattagagatcaatctgga gagatggagtctcgctctgttgcccaggctggagtgcagtggctcaatcttggctcactgccacctctgcct cccaggttcaagtgattctcctacctcagcctcctgagtagctgggattacaagcatgtgccaccactgg ctaatttttctaattttagtagagatggagtttcaccatgttggacaggatggtcttgaactcctgacttag tgatccacccgccttcgcctcccaaagttctgggattacaggcatgagccatcgtgcctggcaattatattt tggaaatgacttgttgaatcaaatcattttaaacttttattttgccagtggaaaaaataagcccccaaaaga  $\tt gcaggggacctgctgzatgtcccacagtaattcagagctggagatgaggttgaaggctttgtgtcttatctc$ caqqqaaaatttqtaqacaqcqtaqctctzttatqtqacqaqcattctcaccccaqtcatcccccaattctc tactcatttgagaacataaattggatcttgccagtctctactcatttttcagcacatcgagcataagatcca gactettteecaggeeteteteatetggeteeteteeteeteettateattaetettettegtagettate ctactccagccatgctgtcttcctattattcctaaaaaartagaaatgcatttcttcctagggcctttgtacc tgcacttgccatcgcttttgctcagaatgttctttttgccaagctttttgcccagcttgttctccatcattgt tatgttttggctgaaatgtcttctcttagtaggttcattctccccagtcactgtctttttattttgctttat tttgggccatctaaggttatcttattagtgtatttgttgttcgtctcctccatgggcatacacctccatgaa  $\tt ggcaggtattttcaccttaggccctcgaatatactggacagcatctggcacgtagtagatgctcaacgaatg$ tttgttgtgtgagcaaatggttggttgattggattgaactgagttcagtatgtaaatatttagggcctcttt gcattctattttacttatgtataaaatgatacataatgatgatataaatgatgtcacagtgtacaaggctgt tgtgggatcaagcaatcaaatgagatcatgcttgtcttttccaaatggtgagggaatagatgcatgtttgtg gttgttacggaatgatcctgtgctcctgaggcaacagaaaggccaggccatctctggtaatcctactcttgc tgtcttccctttgcagAGACACGCCCTGCCAGGCAGGGGAGGAGAGTGGACCACTGCCCCAGTTCCCCAGA CCATCATGGACCTCTTCCAGAATGGGAACTGGACAATGCAGAACCCTTCACCTGCATGCCAGTGTAGCAGCG ACAAAATCAAGAAGATGCTGCCTGTGTGTCCCCCAGGGGCAGGGGGGCTGCCTCCTCCACAAgtgagtcact ggtcgcccaggctggagtgctgtggcatgatcttgcctcactgcaacctccacctcccaggttcaagcgatt tagtagagatagggtttcgccgtgttggctaggctggtctggaattcctgacctcaggtgatccacccgcct  $\verb|cggcctcccaaagtgctgggattacaggcgtgagccactacgcccagccctgtttcagtctttaactcgctt|\\$  $\verb|cttgtcataagaaaaagcatgtgagttttgaggggagaaggtttggaccacactgtgcccatgcctgtccca|\\$  $\verb|cagcagtaaagtcacaggacagactgtgcaggcctggcttccaatcttggctctgcaacaaatgagctggt|\\$ agcetttgacaggcetgggcetgtttetteacetetgaattagggaggetggaceagaaaacteetgtggatttcaggaagaggagtgcttatgatagctctctgctgcttttatcagcaaccaaattgcaggatgaggacaag caattctaaatgagtacaggaactaaaagaaggcttggttaccactcttgaaaataatagctagtccaggtg

 $\verb|cggggtggctcacacctgtaatctcagtattttgggatgccgaggtggactgatcacctaaggtcaggagtt|\\$ cgaaaccagcttggccaatgtggcgaaaccctgtctctactaaaaattcaaaaattagccaggcatggtggc acatgcctgtaatcccagttacttgggaggctgaagcaggagaattgcttgaacctgggaggtggaggtcgc agggagccaaaattgcgccactgtactccagcctgagcaacacagcaaaactccatatcaaaaaataaaatg aataaaataacagctaatctagtcatcagtataactccagtgaacagaagatttattaggcatagtgaatga tggtgcttcctaaaaatctctttgactacaaagaatctcatttcaatgtttattgtttagatgttcagaataa attettgggaaagacettggettggtgtaagtgaattaceagtgcegagggcagggtgaaceaagteteagt  $\tt gctggttgactgagggcagtgtctgggacctgtagtcaggtttccggtcacactgtggacatggtcactgtt$ gtccttgatttgttttctgtttcaattcttgtctataaagacccgtatgcttggttttcatgtgatgacagA **GAAAACAAACACTGCAGATATCCTTCAGGACCTGACAGGAAGAAACATTTCGGATTATCTGGTGAAGACGT ATGTGCAGATCATAGCCAAAAAG**gtgactttttactaaacttggcccctgccktattattactaattagagga attaaagacctacaaataacagactgaaacagtgggggaaatgccagattatggcctgattctgtctattgg aagtttaggatattatcccaaactagaaaagatgacgagagggactgtgaacattcagttgtcagcttcaag gctgaggcagcctggtctagaatgaaatagaaatggattcaacgtcaaattttgccacttagtagcaactt gaccaggtaactggttatccttttaaagccttagtttatctaaattgtgatattaatgttgctcttataagt ttgtcatgaggactaaattaaatggtgtacatagagtgccttgggtactctctgatgggggactccatgata  $\verb|ccatcaacttggtcagttggggtctttcagttaggagtatctcagtgactttaaattggcattgggcattgctgg|$ agtgatagtgaccatgagtttctaagaaagaagcataatttctccatatgtcatccacaattgaaatattat tgttaattgaaaaagcttctaggccaggcacggtggctcatgcctgtaatcccagcactttaggaggccaag gcgggtggatcacttgaggtcaggagtttgagaccagcctggccaacatggggaaaccctgtctctactaaa  ${\tt aatacaaaataagctgggcgtggtggtgcgtgcctgtaatcccagctacttgggaggctgaggcaggagaat}$ tgcttgaatctgggaggcggaggttgcagtgagctgagttcatgccattgcattccagcctgggcaacaaga  $\verb|gtggtttgtaaattggtttaacccaaggcctggttctcatataagtaatagggtatttatgatggagagaag| \\$ gctggaagaggcctgaacacaggcttcttttctctagcacaaccctacaaggccagctgattctagggttat  $\verb|ttctgtccgttccttatatcctcaggtggatatttactccttttgcatcattaggaataggctcagtgcttt|$ gttgctgtctttctggcacgtttagctcagggggaggatggtgttgtaggtgtzcttggattgaagaaagcc ttggggattgtttgtcactcacacacttgtgggtgccatctcactgtgaggaggacagaagccctgtgaaca tgtggagcacacaggggcacagactttagattaggcctgctttatagagtttctgcctagagcatcatg gctcagtgcccagcagcccctccagaggcctctgaaatatttgatatactgatttccttgaggagaatcaga aatctcctgcaggtgtctagggatttcaagtaagtagtgttgtgaggggaatacctacttgtactttccccc caaaccagattcccgaggcttcttaaggactcaaggacaatttctaggcatttagcacgggactaaaaaggt cttagaggaaataagaagcgccaaaaccatctctttgcactgtatttcaacccatttgtccttctgggtttt gaaggaacaggtgggactggggacagaagagttcttgaagccagtttgtccatcatggaaaatgagataggtagggccaggacccctggatctctgggcagagcagacgcaggcccctataatagccctcatgctagaarggag ccggagcctgtgtataaggccagcgcagcctactctggacagtgcagggttcccactctcccaactccccat  $\verb|ctgcttgcctccagacccacattcacacmcgagccactgggttggaggagcatctgtgagatgaaacaccat|\\$ tctttcctcaatgtctcagctatctaactgtgtgtgtaatcaggccaggtcctccctgctgggcagaaacca tgggagttaagagattgccaacatttattagaggaagctgacgtgtaacttctzzgaggcaaaatttagccc tcctttgaacaggaatttgactcagtgaaccttgtacacactcgcactgagtctgctgctgatgatactgtg  $\verb|caccccactgtctgggttttaatgtcaggctgttcttttag\\ \textbf{GTATGGCGGCTTTTCCCTGGGTGTCAGTAAT}|$ **AAG**gtaaaatatctatcgtaagatgtatcagaaaaatgggcatgtagctgctgggatataggagtagttggc aggttaaacggatcacctggcagctcattgttctgaatatgttggcatacagagccgtctttggcatttagc gatttgagccagacaaaactgaattacttagttgtacgtttaaaagtgtaggtcaaaaaacaaatccagaggc  $\verb|caggagctgtagctcatgcctgtaatcctagcactttgggaggctgaagcgggtggatcacttgaggtcagg|$ agttcgagaccagcctggcctacatgacaaaaccccgtatctactaaaaatacaaaaattagctgggctt ggtggcacacacctgtaatcccagctacttgggaggctgaggcaggagaattgcttgaaccctgtaggaaga  $\verb|ggttgtagtgagccaagatcgcaccgttgcactccagcctgggcaacaagagcaaaactccatctcaaaaaaa|$ caaattaaatccagagatttaaaagctctcagaggctgggcgcggtggcttacacctgttatcccagcattt tqqqatqccqaqqcqqqcaaagcacaaggtcaggagtttgagaccagcctggccaacatagtgaaaccctgt  $\verb|ctctgctaaaaaacatagaaaaattagccgggcatggtggcgtgcgcctgtaatcccagctactcgggaggct|\\$  $\tt gaggtgagagaattrcttgaacccgggaggcggaggttgcagtgagcccagattgcaccactgcactccagc$   $\verb|ctgggcgacagagcaagactccatctcaaaaaaagctctcagaacaaccaggtttacaaatttggtcagttg|$  $\tt gtaaataaactgggtttcaaacatactttgctgaaayaatcactgactaaataggaaatgaatcttttttt$  $\verb|tttttttaagctggcaagctggtctgtaggacctgataagtactcacttcatttctctgtgtctcaggtt|\\$  $\verb|tcccat|| \verb|ttttaggtgagaattaaggggctctgataaaacagaccctaggattgtggacagcagtgrtagtcc||$  $\verb|gctcttcagatgatgccggtggagcactttgaggagtcctcaccccaccgtgataaccagacattaaaatct|$ tggggctttgcatcccaggatttctctgtgattccttctagacttgtggcatcatggcagcatcactgctgtagatttc tagtcacttggttc tcaggagccgtt tatttaatggcttcacatttaatttcagtgaacaaggta $\tt gtggcattgctcttcacagggccgtcctgttgtccacaggttccagattgactgttgccccttatctatgtg$ aacaqtcacaactqaqqcaqqtttctgttgtttacagGACAGTTCTGCAGATCGATTTCTCAACAGCTTGGG  ${\tt AAGATTTATGACAGGACTGGACACCARAAATAATGTCAAG} {\tt gtaaaccgctgtctttgttctagtagcttttt}$ gatgaacaataatccttatgtttcctggagtactttcaactcatggtaaagttggcaggggcattcacaaca  $\tt gaaaagagcaaactattaactttaccagtgaggcagtacggtgtagtgtagtgattcagagaatttgctttg$ ccaccagacataccaggtaaccttgactaagttacttaacctatctaaacctcagttycctcatctgtgaaa tggagacagtaatcatagctatttccaaactgttgtgagaattcaatgagttaaaggtataaggtcctcacc ${\tt AAGGGCTGGCATCCATCAGCTCTTTCCTGAATGTCATCAACAATGCCATTCTCCGGGCCAACCTGCAAAAG}$  $\tt GGAGAGAACCCTAGCCATTATGGAATTACTGCTTTCAATCATCCCCTGAATCTCACCAAGCAGCAGCTCTCA$  ${\tt GAGGTGGCTCT} \\ {\tt gtaagtgtggctgttgtctgtatagatggagtggggcaaggggagagggttatggagaagggg} \\$  ${\tt aggctctgggcagaagtgataagtttacgaattggctggttgggcttcttgaactgcagaagaagaaaatgac}$  $\verb|atttaattataagtgtttaatcagtttgatttgtttaaaaaccactgttttaaaatttggtggaatatgtttt|\\$  $\tt gtgtgtgzztgtgaagtttaaagccaggatgagctagtttaaagtatgcagcctttggagtcatacagatct$ gggtttgaatctggtctctaaactttatagatgtatgatattaaatgaggcagttcatgtaaattgccaagc ccagcactcagcacagagttgatatttcacacacattagatacctttcctgtatgtggagcatggcagttcc tgtttctgctttactcctacaggatactaatataggacactaggatctttataccaagaccccatgtaatgg  $\verb|gcttatgagaccattcttcttataaaaaatctgacagaatttttgtatgtgttagatcaataggctgcatact|\\$ catttagttttcaagccccactagtcctttgtgtgtgaaaatttacaacttactgctcttacaaggtcatga acaqtqqaccaaagtgaatgccattaaccactctgacttccttcattagttttattgtgacagtggactctt ttgacctcagtaataccagtttggcatttacattgtcatatttttagacttaaaaatgatcatcttaaccct gtgtgtttgtctgtgtgtccatgtcctcactgattgagccctaactgcatcaaagacccctcagattttcac acgetttttetetecag**gatgaccacatcagtggatgtccttgtgtccatctgtgtcatctttgcaatgtcc** TTCGTCCCAGCCAGCTTTGTCGTATTCCTGATCCAGGAGCGGGTCAGCAAAAGCAAAACACCTGCAGTTCATC AGTGGAGTGAAGCCTGTCATCTACTGGCTCTCTAATTTTGTCTGGGATATGgtaaggacacaggcctgctgt atgttccagctactctaaagatgtatgaaaaagaaatagccagaggcaggtgatcactttcatgacaccaaa cacagcattgggtaccagagttcatgtcacaccagagggaaaattctgtacacaatgatgaaaattaatacc actaccacttaagttcctatgtgacaactttcccaagaatcagagagatacaagtcaaactccaagtcaat gcctctaacttctctgatgggttttaacctccagagtcagaatgttctttgccttactaggaaagccatctg tcatttzgaaaactctgtacattttatcagcagcttatccatccattgcaaataztgtttttgtgccagcca  $\verb|caatatattgcttctatttggaccaatatgggggatttgaaggaattctgaagttctaattatatttcaact|\\$  ${\tt taattcttctcccaccgaacaagtccctggatatttaaaaaataactctcatactctcatttaacctgagtat}$ tacccagataagatgatatatgagaatacaccttgtaacctccgaagcactgtacaaatgtgagcaatgatg gtggagatgatgatgagatctttgctgtttataccaagccccttagactgtgtcactcttctgatccggttg  $\verb|tccttgtatggccatgctgtatattgtgaatgtcccgttttcaaaagcaaagccaagaattaaccttgtgtt|\\$ caggetqtqqtctqaatqqttatgggtccagagggagttgatetttagetcacaettetattaetgcageae aaagattttgcattttggaaggagcaccgtcttactggcaacttagtggtaaaccaaaacctccatttcaca caaatgattgtgaaattcgggtctccttcattctatacaaattcatttgatttttttgaaactaaactttat atttatccatattaaattacatgggttttatttttgttttatcttgattcagtaattactcctttcagtaaa cacagactgagtgctgtgtctgacttatgccaggcataggtgattcagagatgaaaggtcaagtccctga

gtcttcatctaagttgttgataaacacatcaagtaggattggactgaggcagagccctgtagtctgaagctg cagttcttctagcggctgacaagccccactatcacttccctgctggtgctttgctctgccagctgtgaattc tcataattgtcctatcgtcaagtctttatttctgcattttactgcttgatacactgtcaggacagactttaa aattattctcagtgcgatgaaacaattctgacattcatgttatgagcagttacctcataaatagattacatg tgagattgaacttgggcagactataatatagcattaatgatgaaacagacacagtcatcttcgggaagaaga atagaggcttatttgctgcctgtgaaattaaaattactctgactgggaatccatcgttcagtaagtttactg agtgtgacaccttggcttgactgttggaaagacagaaagggcatgtagtttataaaatcagccaaggggaaa atgcttgtcaaaatgtattgtcgggtattttgattaatagtttatgtggcttcattaattcagagttactct ccaatatgtttatctgccctttcttgtctgataatggtgaaaacttgtgtgatgcattgtatatttgattta  $\verb|gggtgaactggatgtctttgttttcacttttag| \verb|TGCAATTACGTTGTCCCTGCCACACTGGTCATTATCAT||$  $\tt CTTCATCTGCTTCCAGCAGAAGTCCTATGTGTCCTCCACCAATCTGCCTGTGCTAGCCCTTCTACTTTTGCT$  ${\tt GTATGG} {\tt gtaagtcacctctgagtgagggagctgcacagtggataaggcatttggtgcccagtgtcagaagga}$  $\verb|gggcagggactctcagtagacacttatcttttgtgtctcaacag \verb|GTGGTCAATCACACCTCTCATGTACCC||$ AGCCTCCTTTGTGTTCAAGATCCCCAGCACAGCCTATGTGGTGCTCACCAGCGTGAACCTCTTCATTGGCAT TAATGGCAGCGTGGCCACCTTTGTGCTGGAGCTGTTCACCGACAAT gtgagtcatgcagagaacactcctgctgggatgagcatctctgggagccagaggacagtgtttaattgtgatcttattccacttgtcagtggtatt atgttgctcttaccaagagtagctcctctgccttccactttacacatgagagctgggcgacgzcattcagtc ctaaggcttttaccatcacctctcttggtgtttttattgtcatctctaagatcaatgcctttagccttgatc ataaccttgaactctaatctcaaattctcacttgcctagtggattgctccatttagatagtatatagatacc  $\verb|ccaacctggatatgtcctagttttctttccccttggaacttaatgcttttcttgccatccctgtcacactca|\\$ gatttcccacattcaactggttatgttgtcagttcttccaggtatggacctctaaaaataaggcttcctccc attccggttgtcattgcctttgtccaaacacagcacacaaggccttttacagttgcacaactcttcctgtcc atacccaccacaccctttcccagctgtaagcttcagatgagttgcctccaaccaccatgctcctgtaggcct ggcttgaaatgcccttcttctgtcacagggtctggtagtatatcccttgcccttcaagatttagctaaaatg tgaagctttccttacctgctgggaggtgttctctctttttctctgtgctctcagagtccttagtccatgcctc cagtacaacgtacatccacttacatggtaatttcctgtttacatacttttcctactcggagtggagtctgtt tcttaataattttgcctctcccatgccctagcacagtgcatccagcgtatagccccttattcagttggtaga tatttggccactgttgccttgtgggatcataagttctgatgtatttgagaagaatttctaaaattctgacaa aatcctgaaactcaaatattgacccagacatgagcaatttgcttttcaaatgctaagggatttttaatggat ttgctttaattaaatctagcctgtttctaagctttattcattatttctccatactcagagcatttctccaga ttttctaaagaatagaattttattgctacatatcatcagctatgcctgctgctatttaattggtatctgaat taaaaggtctggtttgtccctagagaatcaaattttttcttcactcccatatttcagaacttgatacatttt tttttagaagctgaataatatcaatgatatcctgaagtccgtgttcttgatcttcccacatttttgcctggg ACGAGGGCTCATCGACATGGTGAAAAACCAGGCAATGGCTGATGCCCTGGAAAGGTTTG tggctgtaggatgctttaatggagatggcactctgcataggccttggtaccctgaactttgttttggaaaga agcaggtgactaagcacaggatgttcccccaccccatgcccagtgacagggctcatgccaacacagctggt tgtggcatgggttttgtgacacaaccatttgtctgtgtctctgatagcattgagaaaagtgaaagggcagtt actggaaaagtcaaaccataactttgagaattaggtgatcagggaatcagaaggaaagatgcaaactttggc  $\verb|tctttaggcgaatcatgtgcctgcagatgaggtcatttattatcttttacacagtctataaaattataatg|$ tattacatctttttctacctttagaatggttaaaaatatttctccggtagccatatgattattattcatcca ttagataatatagtcaaatgggccatgttatttactgttcatagaagaggggctttttgcaacttgggctac aaaggagatatgtaaggaatttaaggaatggttacatggaactagatttaattgaatctagtggtttaattg ttagaatttattaaaaatactgactgtgaaaattacttgggtcgtttgcctttttaaaaggatttttggcat gtctcattaaaaaaagaaatactagatatcttcagtgaagttacaaatcgaatacacattggctctgaaatt ctgattgatactgggtcataaaaagttttcccaaatcagacttggaaagtgatcactctcttgttactcttt tttccttgtcatgggtgatagccatttgtgtttattggaagatcggtgaattttaaggaacataggcccaaa  $\verb|tttgaggaagggccatggtttttgatccctccattctgaccggatctctgcattgtgtctactag | \verb|GGGAGAA||$ TCGCTTTGTGTCACCATTATCTTGGGACTTGGTGGGACGAAACCTCTTCGCCATGGCCGTGGAAGGGGTGGT GTTCTTCCTCATTACTGTTCTGATCCAGTACAGATTCTTCATCAGGCCCAGgtgagctttttcttagaaccc gtggagcacctggttgagggtcacagaggaggcgcacagggaaacactcaccaatgggggttgcattgaact

agactgtggcaagtaggttttataatactacgttagagactgaatctttgtcctgaaaaatagtttgaaagg ttcatttttcttgtttttcccccaagACCTGTAAATGCAAAGCTATCTCCTCTGAATGAAGATGAAGA TGTGAGGCGGGAAAGACAGAGAATTCTTGATGGTGGAGGCCAGAATGACATCTTAGAAATCAAGGAGTTGAC **GAAG**qtqaqaqaqtacaggttacaatagctcatcttcagttttttttcagctttatgtgctgtaacccagcag tttqctqacttgcttaataaaaggqcatgtgttcccaaaatgtacatctataccaaggttctgtcaatttta ttttaaaaacaccatggagacttcttaaagaattcttactgagaattcttttgtgatatgaattcccattct  ${\tt aaaactgaggtagagagaataaatggttgattttgagtttgagtttcatagtccaaaaagctgatatattgc}$ ctgtgttcaagagggtctatatcagccctctagatgccagcatctccaaattttacttttttggaatctgta caqtatttqcaatatttttattacaaatttctactctqtqqaatttaatttttaaaaatacctqcaatacata taagttcacttttattttgagcttcagaatcattcagaagccagtcgccacaaacgcagaccaaggctcttg gcacatcaaatatgcctatggcttagggttattgacaagtcttatgttgcagtgtatgtggtttatagtcct TATATAGAAGGAAGCGGAAGCCTGCTGTTGACAGGATTTGCGTGGGCCATTCCTCCTGGTGAGgtaaagacac tttgtctatattgcgtttgtccctattagttcagactatctctacccaatcaagcaacgatgctcgttaaga ggtaaaagtggattttaaaggcttctgtatttatgccaggatggagcaattagtcatcgagaagagggac cctgtatgtcaagagaatgatttcagagaatccaatacaatttaagaaaaagcatggggctgggcgcagtga  $\verb|ttcactcctgtaatcccagcactttgggaggccgaggttgggcggactcacgaggtcaggagattgagaccat| \\$  $\verb|cctggccaacatggtgaaaccccatctctactataaatacaaaaattagctgggcatagtagtgcattcctg|$  ${\tt aaaacatgcttttgtgatccattttgggatggtgatgacattcaaatagttttttaaaaaatagattttctcct}$  $\verb|ttctggtttccgtttgtgttcttttatgcccttttgccagagtaggtggtgczaatttggctazgctggctt|\\$ tcattactgtttttcaczaczattaacztttggcctcaacttgacaactcaaatatatttataaatacagc  $\verb|cacacttaaaattggtcccattatgaaatacatatttaaatatctatacgatgtgttaaaaccaagaaaatat|$ ttgattcttctctqatatttaagaattgaaggtttgaggtagttacgtgttaggggcatttatattcatgtt tttaqaqtttqcttatacaacttaatctttccttttcag TGCTTTGGGCTCCTGGGAGTTAATGGGGCTGGAAAATCATCAACTTTCAAGATGTTAACAGGAGATACCACTGTTACCAGAGGAGATGCTTTCCTTAACAAAAAT tatttttgattacagtggtatttttagagttcataaaaatgttgaaatatagtaaagggtaaagaagcacat  ${\tt aaaatcatccatgatttcaatatctagagataatcacaatttacatttcctttcagtctcattctttt}$ taacagctttattcaggtataatttacatacaatataatttgcttgttttttaagagtataatttagtgatt tttggtaaattgagagttttgcaaccatcaccacaatccagttttagaacttttccatcaccccacatctgt gttaatgagtgtattatgaatatttcccagtgggttacatttcctaagatgtggaattttacattgctacat  $\tt aaaatccccctatgtacatgtacctataatttatttaataaattccttataaatgttggacacattagtttc$ catttttcactatgtaaatatgtccctgtatacatcttttattatttcctcaggaacaattcctacaaagta aattgccctctctaaagagcatacaaattgactgagccaccgttaggccattttctgagactgcacaggtca caaagcaatctgatctttgggaatacagctacattttataggcttcttagataatgttactctaagtacttt aaatatgtggggcttctctgggctttttttttttttgagacggagtttcactcttactgcccaggctggagag caatggcgcgaccttggctcactgcaacctccgcctcccaggttcaagcgattctcctgcctcagcctcctg caccatgttggccagactggtctcgagctcctgacctcaggtgatccacctgcctcagcctcccaaagttct gggattacaggcatgagccactgcgcccggcttctctggacttattatgtggagagatagtacaaggcagtg gctttcagagttttttgaccatgaccgttgtgggaaatacattttatatctcaacctagtatgtacacacag acatgtagacacatgtataacctaaagtttcataaagcagtacctactgttactaattgtagtgcactctgc ccactaatgaacaatgactcacaatttgaacacactggacagggggatagccaataaaattgaaaagagcaa ggaaattaatgtattcatgatctcctctcctgtctttacatttttgcagtagcaatgtaaaggaatcctaa gagaacagacattctgggaatagcaggcctagcgctgcacaactgctttcctaggcttgctcctagtaccaa gctcctgacgcatatagcagtggcagtaataaccagcccatagtaaggtttgtcacagggactggttgtaag aactgatttggttggtatagctgtgagggcctggcacggtgtccacgtgtgcctcaatcctaattctgaaaa atgccgctgtggctgaggtgcagtcatcagtctggaacgtgaacactgaacttctctcacatgtgattcttc acttgactggcttcatagaaccccaaagccaccccaccaccataaattgtgtctctaggttctgtgttgc

tcacactcaaaatttctgggccttctcatttggtgcatgtgaatggtgcatatgagtgaagtctaggatggg gccttagcgttaaagccctggggtagtgtgactgagattgttggtaaagaatgtgcagtggttggcatgacc tcagaaattctgaaatgggactgcacctgcagactgaagtgttcagagagccagggaggtgcaaggactggg gagggtagaggcaggaaccctgcctgccaggaagagctagcatcctgggggcagaaaggctgtgctttcaag tagcagcagatgtattggtatctttgtaatggagaagcatactttacaggaacattaggccagattgtctaa ccagagtatctctacctgcttaaaatctaagtagttttcttgtcctttgcagTATCTTATCAAACATCCATG **AAGTACATCAGAACATGGGCTACTGCCCTCAGTTTGATGCCATCACAGAGCTGTTGACTGGGAGAACACG** agcctgtctcctttggcatcctgacaatatataccttatggcttttccacacgcattgacttcaggctgttt ttcctcatgaatgcagcagcacaaaatgctggttctttgtatctgctttcagggtggaaacctgtaacggtg gtggggcagggctgggtgggcagagagggagtgctgctcccaccacgagtcccttctccctgctttggct taggacagcatgataaaattcccaagccagaccaaagtcaaggtgctttttatcactgtagGTTGGTGAGTG GGCGATTCGGAAACTGGGCCTCGTGAAGTATGGAGAAAAATATGCTGGTAACTATAGTGGAGGCAACAAACG CAAGCTCTCTACAGCCATGGCTTTGATCGGCGGGCCTCCTGTGGTGTTTCTGgtgagtataactgtggatgg aaaactgttgttctggcctgagtggaaaacatgactgttcaaaagtcctatatgtccagggctgttgtatga ttggcttgtcttcccccagggacagcagagcaaccttggaaaagcagagggaagcttctcccttggcacaca ctggggtggctgtaccatgcctgcagatgctcccaaatagaggcactccaagcactttgtttcttagcgtga aatgaagagtgtggacacagctttaaaatccccaaggtagcaactaggtcatagttcctztacacacggata  $\tt gatgaaaaacagatcagactgggaagtggcccttgaccttttttcttctgtagataagagcattgatgttat$ tacgggaagaagcctttgaggcttttatgtattccacctcggtctggaatttgtttctgtaaggctaacagt acttcaatagaggtttcagacaaaaagttgttttgtatatacttatcagtcatgaaaagataattacaacta aatggcctttttccttccctatttatttggagaaatttaattacataaaaaagtactcagaatatttgagtt tcctgcatcaataagacatttataataatgaccttgtttacaaatgaatttgaaagttactctaattctttg attcatcaagaaataactagaatggcaagttaaaatttaagctgtttcaaagatgcttctgcatttaaaaac aaatttatctttgattttttttccccccagcaaataagacttattttattctaattacag**GATGAACCCACC** ACAGGCATGGATCCCAAAGCCCGGCGGTTCTTGTGGAATTGTGCCCTAAGTGTTGTCAAGGAGGGGAGATCA  ${\tt GTAGTGCTTACATCTCATAG} {\tt gtccgtagtaaaagtcttgggttcctcactgtgggatgttttaactttccaagtagtagtagtagttctcaagtgggatgttttaactttccaagtgggatgttttaactttccaagtgggatgttttaactttccaagtgggatgttttaactttccaagtgggatgttttaactttccaagtgggatgttttaactttccaagtgggatgttttaactttccaagtgggatgttttaactttccaagtgggatgttttaactttccaagtgggatgttttaactttccaagtgggatgttttaactttccaagtgggatgttttaactttccaagtgggatgttttaactttccaagtgggatgttcctcactgggatgttttaactttccaagtgggatgttttaactttccaagtggatgttttaactttccaagtggatgttttaactttccaagtggatgttttaactttccaagtggatgttttaactttccaagtggatgttttaactttccaagtggatgttttaactttccaagtggatgtttttaacttttccaagtggatgttttaacttttaacttttccaagtggatgttttaacttttccaagtggatgttttaacttttaacttttccaagtggatgttttaacttttaacttttccaagtggatgttttaacttttaacttttaacttttaacttttaacttttaacttttaacttttaacttttaacttttaacttttaacttttaacttttaacttttaacttttaacttttaacttttaacttttaacttaactttaactt$ tagaatatgcgatcattttgtaaaaattagaaaatacagaaaagcaaagagtaaaacaattattacctgaaa ttatatatgcatattettacaaaaatgcaageeeagtataaataetgetettttteaettaatattgtaa acattattccaagtcagtgcatttaggtgtcatttcttatagctggatagtattccattaggatatactctt atttaactattcccccttttgtagacatttggattatttccaacttgttcacaattgtaaacaccactacac tgaacagcatcatccctatatccacatgtacttgtaacagaatacaattccctaggaagctggaatgctgga  $\mathtt{agtcatggtgatgttctcatggttacagagaatctctctaaaaactaaaacctctttctgttttaccgcag extbf{TA}$ TGGAAGAATGTGAAGCTCTTTGCACTAGGATGGCAATCATGGTCAATGGAAGGTTCAGGTGCCTTGGCAGTG TCCAGCATCTAAAAAATAGgtaataaagataatttcttttgggatagtgcctagtgagaaggcttgatattta ttcttttgtgagtatataaatggtgcctctaaaataaagggaaataaaactgagcaaaacagtatagtggaa agaatgagggetttgaagteegaaetgeatteaaattetgtetttaeeatttaetggttetgtgaetettgg gcaagttacttaactactgtaagagttagtttccctggaagatctacctcctagctttgtgctatagatgaa atgaaaaaatttacatgtgccagtactggtgagagcgcaagctttggagtcaaacacaaatgggtttgcat  $\verb|cctggccctaccaattatgagctctgagccatgggcaagtgactaactccctgggcctcagtttctctgtaa|\\$ catctgtcagacttcatgggtccaggtgaggattaaaggagatcatgtatttacagcacatggcatggtgct tcacataaaataagtatttagtaaatgataactggttccttctctcagaaacttatttctgggcctgccagg ggccgccctttttcatggcacaagttgggttcccagggttcagtattcttttaaatagttttctggagatcc tccatttgggtatttttcctgctttcagGTTTGGAGATGGTTATACAATAGTTGTACGAATAGCAGGGTCC **AACCCGGACCTGAAGCCTGTCCAGGATTTCTTTGGACTTGCATTTCCTGGAAGTGTTCTAAAAGAGAAAACAC** CGGAACATGCTACAATACCAGCTTCCATCTTCATTATCTTCTGGCCAGGATATTCAGCATCCTCTCCCAG AGCAAAAAGCGACTCCACATAGAAGACTACTCTGTTTCTCAGACAACACTTGACCAAgtaagctttgagtgt caaaacagatttacttctcagggtgtggattcctgccccgacactcccgcccataggtccaagagcagtttg tatcttgaattggtgcttgaattcctgatctactattcctagctatgctttttactaaacctctctgaacct gaaaagggagatgatgcctatgtactctataggattattgtgagaatttactgtaataataaccataaaaac taccatttagtgagcacctaccatgggccaggcattttacttggtgcctaatcctatttaaattagataaaa aagtaccaaataggtcctgacacttaagaagtactcagtaaatattttcttccctcttccctttaatcaaga 

aggtcaggagatccagataatcctggccaacagggtgaaaccccgtctctactaaaaatacaaaattagct gggcatggtggtgcgcacttgtagtcccagctacttgcgaggctgaggcaggagaattgctcgaacccagga ggtggaggttacagtgagccaaggtctcgccactgcactccagcctggggacagagcaagaccccatttcaa ggggggaaaaaaagtctatttttaagttgttattgcttttttcaagtattcttccctccttcacacacgtt ttctagttaatccatttatgtaattctgtatgctcctacttgacctaatttcaacatctggaaaaatagaac tagaataaagaatgagcaagttgagtggtatttataaaggtccatcttaatcttttaacagGTATTTGTGAA CTTTGCCAAGGACCAAAGTGATGATGACCACTTAAAAGACCTCTCATTACACAAAAACCAGACAGTAGTGGA ACGGGGTGGCTGAAAGTAAAGAGGAACTAGACTTTCCTTTGCACCATGTGAAGTGTTGTGGAGAAAAGAGCC AGAAGTTGATGTGGGAAGAAGTAAACTGGATACTGTACTGATACTATTCAATGCAATGCAATTCAATGCAAT GAAAACAAAATTCCATTACAGGGGCAGTGCCTTTGTAGCCTATGTCTTGTATGGCTCTCAAGTGAAAGACTT GAATTTAGTTTTTTACCTATACCTATGTGAAACTCTATTATGGAACCCAATGGACATATGGGTTTGAACTCA CACTTTTTTTTTTTTTTTTTTTCTCTGTGTATTCTCATTGGGGTTGCAACAATAATTCATCAAGTAATCATGG CCAGCGATTATTGATCAAAATCAAAAGGTAATGCACATCCTCATTCACTAAGCCATGCCATGCCCAGGAGAC TGGTTTCCCGGTGACACATCCATTGCTGGCAATGAGTGTGCCAGAGTTATTAGTGCCAAGTTTTTCAGAAAG TTTGAAGCACCATGGTGTCATGCTCACTTTTGTGAAAGCTGCTCTGCTCAGAGTCTATCAACATTGAATA TCAGTTGACAGAATGGTGCCATGCGTGGCTAACATCCTGCTTTGATTCCCTCTGATAAGCTGTTCTGGTGGC AGTAACATGCAACAAAAATGTGGGTGTCTCCAGGCACGGGAAACTTGGTTCCATTGTTATATTGTCCTATGC TTCGAGCCATGGGTCTACAGGGTCATCCTTATGAGACTCTTAAATATACTTAGATCCTGGTAAGAGGCAAAG AATCAACAGCCAAACTGCTGGGGCTGCAAGCTGCTGAAGCCAGGGCATGGGATTAAAGAGATTGTGCGTTCA **AACCTAGGGAAGCCTGTGCCCATTTGTCCTGACTGTCTGCTAACATGGTACACTGCATCTCAAGATGTTTAT** CTGACACAAGTGTATTATTTCTGGCTTTTTGAATTAATCTAGAAAATGAAAAGATGGAGTTGTATTTTGACA AAAATGTTTGTACTTTTAATGTTATTTGGAATTTTAAGTTCTATCAGTGACTTCTGAATCCTTAGAATGGC GCATATCAGTCATGACTAGTGCCTAGAAAGCAATGTGATGGTCAGGATCTCATGACAzTTATATTTTGAGTTT **AAAGAGTATGTACGTACGTATAAGACTAGAGAGATATTAAGTCTCAGTACACTTCCTGTGCCATGTTATTCA** GCTCACTGGTTTACAAATATAGGTTGTCTTGTGGTTGTAGGAGCCCACTGTAACAATACTGGGCAGCCTTTT TTTTTTTTTTTTAATTGCAACAATGCAAAAGCCAAGAAAGTATAAGGGTCACAAGTCTAAACAATGAATTC ZTTCAACAGGGAAAACAGCTAGCTTGAAAACTTGCTGAAAAACACAACTTGTGTTTATGGCATTTAGTACCT TCAAATAATTGGCTTTGCAGATATTGGATACCCCATTAAATCTGACAGTCTCAAATTTTTCATCTCTTCAAT CACTAGTCAAGAAAATATAAAAACAACAAATACTTCCATATGGAGCATTTTTCAGAGTTTTCTAACCCAGT **AAAAGAAAATATGAGAGAACTATTGTTTGGGGAAGTTCAAGTGATCTTTCAATATCATTACTAACTTCTTC** CACTTTTTCCAGAATTTGAATATTAACGCTAAAGGTGTAAGACTTCAGATTTCAAAATTAATCTTTCTATATT TTTTAAATTTACAGAATATTATATAACCCACTGCTGAAAAAGAAAAAAATGATTGTTTTAGAAGTTAAAGTC **AATATTGATTTTAAATATAAGTAATGAAGGCATATTTCCAATAACTAGTGATATGGCATCGTTGCATTTTAC** AGTATCTTCAAAAATACAGAATTTATAGAATAATTTCTCCTCATTTAATATTTTTCAAAAATCAAAGTTATGG TTTCCTCATTTTACTAAAATCGTATTCTAATTCTTCATTATAGTAAATCTATGAGCAACTCCTTACTTCGGT  ${\tt TCCTCTGATTTCAAGGCCATATTTTAAAAAATCAAAAGGCACTGTGAACTATTTTGAAGAAAACACAACATT}$ TTAATACAGATTGAAAGGACCTCTTCTGAAGCTAGAAACAATCTATAGTTATACATCTTCATTAATACTGTG TTACCTTTTAAAATAGTAATTTTTTACATTTTCCTGTGTAAACCTAATTGTGGTAGAAATTTTTTACCAACTC TATACTCAATCAAGCAAAATTTCTGTATATTCCCTGTGGAATGTACCTATGTGAGTTTCAGAAATTCTCAAA ATACGTGTTCAAAAATTTCTGCTTTTGCATCTTTGGGACACCTCAGAAAACTTATTAACAACTGTGAATATG AGAAATACAGAAGAAAATAATAAGCCCTCTATACATAAATGCCCAGCACAATTCATTGTTAAAAAAACAACCA **AACCTCACACTACTGTATTTCATTATCTGTACTGAAAGCAAATGCTTTGTGACTATTAAATGTTGCACATCA** TTCATTCACTGTATAGTAATCATTGACTAAAGCCATTTGTCTGTGTTTTTCTTCTTGTGGTTGTATATATCAG GTAAAATATTTTCCAAAGAGCCATGTGTCATGTAATACTGAACCACTTTGATATTGAGACATTAATTTGTAC CCTTGTTATTATCTACTAGTAATAATGTAATACTGTAGAAATATTGCTCTAATTCTTTTCAAAATTGTTGCA TCCCCCTTAGAATGTTTCTATTTCCATAAGGATTTAGGTATGCTATTATCCCTTCTTATACCCTAAGATGAA  ${\tt TTTTGCACTGGAATATCTGAGAAATTGMAMAACTAGACAAAAGTTTCACAACAGATTTCTAAGTTAAATCAT}$ TTTCATWAAARRAAAAARAAAAAAATTTTGTATGTCAATAACTTTATATGAAGTATTAAAAATGCATATT TCTATGTTGTAATATAATGAGTCACAAAATAAAGCTGTGACAGTTCTGTTGGTCTACAGAAA tgcatttgtggcaccacctactgttgaagggttataaagccattagaaaagtagaggggaagtgatttggat caaaaggaaaaactttagaaaagattcaaatgttcccttaatcataaaagagaactgaggggactacttgaa aataaaaggttgttttgtattttcatgttggttaagatactgagztaacwggtattaagtgttagaggtttt  ${\tt tagataaatattctgcttaatgattatgaagctgcactgagatttctgaaaatgctctgtagctgagcttat}$  $\verb|ttaataaatgttcacttggtataggggaagctacaaaggcagccttcagtgtccttttgtttattcaaccaa|$ aaatataaggacacaatgtagcagttatactgggaaggtgctgggggtggtggcaatggtgagcaggaaggc $caga caa catat {\tt gag cagt gct gata a at gta at tktt catagct catta {\tt aga at cagtt tcaga aa}$  $\tt gagatgtctgcttatttkgctrcttgaagaatccctgtcaaacagtccttttsaggaagtacaagaggctgt$  $\verb"ctctatttgtgacctcaggaatggctgtgacagtgtcgtgagcagtccttttcctgtggcacagatctgaac"$  $\verb|tttgtgtgcagaaaaatcttggcttcaagtgagccaagatgccccctgagcatcagcatcacaacttcatcc|$  ${\tt tcctatcttgaagttcatgttatagtgactttaatgaaatcatagaacactgtttcttcgtgzaacaatgac}$ gagggagaggaaaaaactttattgaaaaataaaaaggcaggtaatttagatgaaaatatgttacccatgagg  $\verb|ttttgtttttgtttttgagaaacagaatctcgctctgtcgtccaggctggagtgcagcg|$ gcatgatcttggctcactgcaacctccgcctcccgggttcaagcgattctcctcagcttcccaagtagctgg tactacaggcatgcgccaccacaaccagctaatttttgtatttttagtagagatggggtttcactatacgtt ggccaggctggtctcaaactcctgacctaaggtgatccttctgccttgggctcccaaagtgctgggattaca ggcatgagccaccttgcctggccctacccatgagccttgactaaaacattcttctatctgtagaaaagccca aaaacccacttagcttcagttttcaagtgtttactgtgttgtcatgcacttcatttaattctcaacacctgc cctatgaggtaaaaagtaccattttacatatgagtaaattacagctcagtggataagaaactcgtccaaagg tacaggttcagtcaagtggcagagggttctttttgttgaagttaggtatcagttaaaattgaccttgtaaaa ggtactagggggtacaatgtagaagaaaatagaattcctgctctaatgaatttatatttcagtggtgaaaga tgatgtgtggacaaacacatctaatgtattttgacagcaatgggtgctaagaagaaaataagacatggtaat tggataacaatggagagaagtcagagatggccttttctgaggagtgacatgctcagaatcgaataaaaagag gggaaaaagcttggcaagctgaggtggtaaaagagctatctgtactaatgtctcttgtactgagttagcaag gacaagagtggcagggggtggaactggagagatagcagggaccacatctcacaggatctcgccagccttttt aaggtatttggattttattgttagtgcaacaaggagccactggagagttttaaacagtagtggtgtgaccta ctgtttcagaaagaacactggctactatgggaagaaaggacagtaggaagactaatagataatggtggattg acttgctgacagactgcatgtaagggctgagggaaagaggctagcaaggtgacttctagtttgtgacctga actaggtagatggttgtgttaaaaatgcagtgggtatttcagtctgaagctcaggggcaatgatggaaaata agata a at gtgtgca agttggctgggcgtggtggtgcacgcctata at cacagcactttgggaggccgagacaaaattagctgggcatggtggtgcatgcctgtaatccaagctacttgggaggctgagacaagagaatcgcttgcacctgggaggcggaggtttcagtgagctgagatcgcaccattgcactccagcctgggcaacaagagcgaa actccatctaaaaaaaaaagtgtgcaagttattggtacgtatatatttaagcctcgggactgaatgagatta cctagagagaatgaagatagggaacattcttgagcctgagatcctataacatttagaagagaagctagccag ggaaattgagagggactggccagtgagagagagtaaaatctgaagagtataatgccatatgttgaagctcag agaattattgtttcaggaaggcagaagttgtcaattatgtccaacattgctgagaagatgagtaaggaatgt aaatgagtaaaggcaggaatggctattgaatttgttaagacagaggtccttggtgaccttcctaagagtcat ctgcaaatatatgcaaatctatatttttgctttgaagggaaacagaaaacaggacaacagctggtttacaga ttgattctgctgttttgcttttaatcctacaggcatttcttctggcaggagccttgtacacactctgggtgg actattataaaactcattttgtctagtgcccatactcctttaccttaggatcctgggccaactgtcactaaa gaaaacaaaccatttcctcctcctgggggaatgtgcttctttcaagaaggtgcttagagaatagacattcta ggtgacagcagttatgaaagaggtgtctctaatgaacctaacacttcttccaacatactccaggttcaccct cctttgaagacagaaagtactacaacttcagttgccaccctagtcaggttcataggatttactcagtaggtt aagagatggtgctgagaatgaagtccagagtttgagtctacaagtggcatttgcttctcctttgggacttct gtggcagggtgtggaaccaaatcagattggttgcatatctgtttctcttcctgaaaatacaattcaaatacc atagccagaacttctactgagtcattcatcgtgtattccaggaatactttccaaatggagtagtgaggcact tccaataacagttatgtaatctgttaacagtggctcaaaatgacatgtgaaggaatgatgtacttcttttt cagactcacagatctcatatgttaattcagtcaacaagtacttagggcttatcacatgccaggcacaggtaa 

tagttcaggttgctgtaacaagagtaccatagacagggtggcttamacaacaacatttctttctcacagat ctagtggctgggaagtctaagaccagggtgccagcatgaagaagttctggtgaaggcttacattctggtttc ctcacagtgagggctcttcacgcccttataaatgcactaattctattacccacatgacctcatctaaaacta actcacaaaggccaaacctcctatgttgagattaaggcttcaacataggaattttgggggggacaaaaacatt cagtctctagcagataggggccactgtgggaggggattacaatcttaaatagggttgtcagggaaggcttca tgagggcaaagacctgaggaggcatggaaatgatccacgcagatgcatgtctggggaagagcattccaggca gaggcagtgggaatggaccctcaggtaagagcatgtttagcaagttcagagaaaaagcctcttaggtcaggtc tggagcgagagtggaaaatgtaacaggacagatcatgtaaagacttgtagaccacagttagaggcttggaca ataactctgaggatgacatgaaggtattgggagggggtgttgagcagagggagtgatatgatctggtttatat tttagattattctgactgctatgttgaaaatagggttgagagcagaggggaagggcagcaccagttaaga ccacttcccaaaaatccagatgatgatgggcttgaaccaggagagttgctatagggatgtgaagcaatcaaa ttctagatatttgggacctgctgacaggtacataatggtgtatgagagaaaaggcagtgtgagaatgactct gaagtctgtggcctgagcaaaacagaaacctggagttgccaatagctgagataaagtttctggttaaagatc aagagctcagttttggacaagaggggtgtgagatttctaatagacattcaggtggaggtgtggggaacacac  $\verb|ctggatgtgatgagcctggaattcaaattcacatgtgtgaatttgaaaaaaagattcagaaaagaggtgtgga|\\$ taaatagaaaagagaagtggtccaaggactcagtccttacatcagaggtcaaagagacaagatggagactag gagatatgaaggcttatgcagtgagtgtttcggagaaacgaagaaacttcccagaagaaaggagaggtcaac atgtttaagagataatgtgagggaagaaatggaggcaggaagtatgaactactcttttgagtcatattgta aggagaagaatccagttgaaggggaatactgtggcttcaggagacaggaaaactgcctaagccacatccttcagcaagtgagtgttcaagtggagggtttgtctttgcttggggcacgggcggttcatccacagtgaaaggaga gaaggcagggcatgtggggttggctgtagaaagcgggcagacggggtgggaacttatgaagactcttctgat  ${\tt tgttattttctctgttaagtaaaaggaaaggtcattggctaagaatgaagatggacgcgcaggtgctgggag}$ tcatcgaagagaatgaaagaatgaataaaatagagaaaaatacaatgctattatataaacctatacatttaa  $\verb|attactttcctcttcaaattagacccctggaaggcaaatctctgtcatgttaagttttaggaaaagtcata|\\$  $\verb|atctacttggagctaagtatgaagaataaggtatatgatttaaaccacataattctatttttgcttaaaccg|$ gggaagcctttaaggtaacgtagagtgtacccattaaaaaagataaaaatgtcagcttccccttccctttaa atatagtaaggctcaaaggtaattgatgttcataaccctaaggtactataacagtctgaagcaaaatattaa $\verb|atgtcttctgtagtattttagttaacttttaattttattggtaatttatgtgtagttaaccacatacttgtg|$  $\verb"cctcaactatttcacataaatgtgagatgtcttaggcctctttgaactctgcatggaaaagaatgctgagga$ ggtatgtctgtttaagctgccactgcctctcataaataatatctcacattgcataatagcccagataa ctaattcacaatttactattttatagctgtaagattttaaaaaatataaaataacatagctgtaaatacagat tatcagaagatagtctgtaaaaatgtaaatataatatagctgtaaatatacactatcggaagtaccaaatct agttttagtaggtagaggcatcaagtaaaatggaaatgaaagatgtttcaaggaaaactccaggacatctgt  $\tt ggcagtactaaagaaaccttccttctcaggttcccagcatgctattttattgatgtaacaacattttcaata$ aagttggtaaattatcactatattactgtcttatagcaacatagcaagagctttagagatcatataagtata aaatgtgaatttaaaaaaacaatgaatatgcaggatttttattagggcaagcgtttccataaccataaatat  $\verb|ttctttaaaacaaataaatgtcccaagatctctgttagtgatccaaactaagtagaaattagtaaaattaat|$ tataaatgaacaatttcagcatataaaccaacaagtcttttctagatttttaacactgtgacccaattgcat ttccacagtaaagaaataaacaatctaatatttttataaatcccattttatatcacaaaataacctttacta aatactgtcaggcaaggaaatgtaaaatccttatttgagtaaaagaaaatgctataaagcaatgagttatca aaatacagaagaggtattctaaaacaaatgaaaaaccaagatgatgaaatagtgacaactacttctaatgtg taacagatactgaaatgccaaggtgaaagtgaactgaattatttcttaaagcagtggagaatatgtaacttt caaaaatgcaagaagcacagcaaattaactaattaacttaccacctccttcaaataaaagcgagaacctctt gggagaatttaagcaccattagcagacacatcttagagc

## Figure 2A SEQ ID NO: 5

MACWPQLRLLLWKNLTFRRRQTCQLLLEVAWPLFIFLILISVRLSYPPYEQHECHFPNKAMPSAGTLPWVQ GIICNANNPCFRYPTPGEAPGVVGNFNKSIVARLFSDARRLLLYSQKDTSMKDMRKVLRTLQQIKKSSSNL KLQDFLVDNETFSGFLYHNLSLPKSTVDKMLRADVILHKVFLQGYQLHLTSLCNGSKSEEMIQLGDQEVSE LCGLPREKLAAAERVLRSNMDILKPILRTLNSTSPFPSKELAEATKTLLHSLGTLAQELFSMRSWSDMRQE VMFLTNVNSSSSSTOIYOAVSRIVCGHPEGGGLKIKSLNWYEDNNYKALFGGNGTEEDAETFYDNSTTPYC NDLMKNLESSPLSRIIWKALKPLLVGKILYTPDTPATRQVMAEVNKTFQELAVFHDLEGMWEELSPKIWTF  ${ t MENSQEMDLVRMLLDSRDNDHFWEQQLDGLDWTAQDIVAFLAKHPEDVQSSNGSVYTWREAFNETNQAIRT$ ISRFMECVNLNKLEPIATEVWLINKSMELLDERKFWAGIVFTGITPGSIELPHHVKYKIRMDIDNVERTNK IKDGYWDPGPRADPFEDMRYVWGGFAYLQDVVEQAIIRVLTGTEKKTGVYMQQMPYPCYVDDIFLRVMSRS MPLFMTLAWIYSVAVIIKGIVYEKEARLKETMRIMGLDNSILWFSWFISSLIPLLVSAGLLVVILKLGNLL PYSDPSVVFVFLSVFAVVTILQCFLISTLFSRANLAAACGGIIYFTLYLPYVLCVAWQDYVGFTLKIFASL LSPVAFGFGCEYFALFEEQGIGVQWDNLFESPVEEDGFNLTTSVSMMLFDTFLYGVMTWYIEAVFPGQYGI PRPWYFPCTKSYWFGEESDEKSHPGSNQKRISEICMEEEPTHLKLGVSIQNLVKVYRDGMKVAVDGLALNF YEGQITSFLGHNGAGKTTTMSILTGLFPPTSGTAYILGKDIRSEMSTIRQNLGVCPQHNVLFDMLTVEEHI WFYARLKGLSEKHVKAEMEQMALDVGLPSSKLKSKTSQLSGGMQRKLSVALAFVGGSKVVILDEPTAGVDP YSRRGIWELLLKYRQGRTIILSTHHMDEADVLGDRIAIISHGKLCCVGSSLFLKNQLGTGYYLTLVKKDVE SSLSSCRNSSSTVSYLKKEDSVSQSSSDAGLGSDHESDTLTIDVSAISNLIRKHVSEARLVEDIGHELTYV LPYEAAKEGAFVELFHEIDDRLSDLGISSYGISETTLEEIFLKVAEESGVDAETSDGTLPARRNRRAFGDK QSCLRPFTEDDAADPNDSDIDPESRETDLLSGMDGKGSYQVKGWKLTQQQFVALLWKRLLIARRSRKGFFA QIVLPAVFVCIALVFSLIVPPFGKYPSLELQPWMYNEQYTFVSNDAPEDTGTLELLNALTKDPGFGTRCME GNPIPDTPCOAGEEEWTTAPVPQTIMDLFQNGNWTMQNPSPACQCSSDKIKKMLPVCPPGAGGLPPPQRKQ NTADILQDLTGRNISDYLVKTYVQIIAKSLKNKIWVNEFRYGGFSLGVSNTQALPPSQEVNDAIKQMKKHL KLAKDSSADRFLNSLGRFMTGLDTRNNVKVWFNNKGWHAISSFLNVINNAILRANLQKGENPSHYGITAFN HPLNLTKQQLSEVALMTTSVDVLVSICVIFAMSFVPASFVVFLIQERVSKAKHLQFISGVKPVIYWLSNFV WDMCNYVVPATLVIIIFICFQQKSYVSSTNLPVLALLLLLYGWSITPLMYPASFVFKIPSTAYVVLTSVNL FIGINGSVATFVLELFTDNKLNNINDILKSVFLIFPHFCLGRGLIDMVKNQAMADALERFGENRFVSPLSW DLVGRNLFAMAVEGVVFFLITVLIQYRFFIRPRPVNAKLSPLNDEDEDVRRERQRILDGGGQNDILEIKEL TKIYRRKRKPAVDRICVGIPPGECFGLLGVNGAGKSSTFKMLTGDTTVTRGDAFLNKNSILSNIHEVHQNM GYCPOFDAITELLTGREHVEFFALLRGVPEKEVGKVGEWAIRKLGLVKYGEKYAGNYSGGNKRKLSTAMAL IGGPPVVFLDEPTTGMDPKARRFLWNCALSVVKEGRSVVLTSHSMEECEALCTRMAIMVNGRFRCLGSVQH LKNRFGDGYTIVVRIAGSNPDLKPVQDFFGLAFPGSVLKEKHRNMLQYQLPSSLSSLARIFSILSQSKKRL  $\verb|HIEDYSVSQTTLDQVFVNFAKDQSDDDHLKDLSLHKNQTVVDVAVLTSFLQDEKVKESYV*|$ 

## Figure 2B SEQ ID NO: 6

GTCCTGCTGTGAGCTCTGGCCGCTGCCTTCCAGGGCTCCCGAGCCACACGCTGGGGGTG CTGGCTGAGGGAACATGGCTTGTTGGCCTCAGCTGAGGTTGCTGCTGTGGAAGAACCTCA CTTTCAGAAGAAGACAAACATGTCAGCTGTTACTGGAAGTGGCCTGGCCTCTATTTATCT TCCTGATCCTGATCTCTGTTCGGCTGAGCTACCCACCCTATGAACAACATGAATGCCATT TTCCAAATAAAGCCATGCCCTCTGCAGGAACACTTCCTTGGGTTCAGGGGATTATCTGTA ATGCCAACACCCCTGTTTCCGTTACCCGACTCCTGGGGAGGCTCCCGGAGTTGTTGGAA ACTTTAACAAATCCATTGTGGCTCGCCTGTTCTCAGATGCTCGGAGGCTTCTTTTATACA GCCAGAAGACACCAGCATGAAGGACATGCGCAAAGTTCTGAGAACATTACAGCAGATCA AGAAATCCAGCTCAAACTTGAAGCTTCAAGATTTCCTGGTGGACAATGAAACCTTCTCTG GGTTCCTGTATCACAACCTCTCTCTCCCAAAGTCTACTGTGGACAAGATGCTGAGGGCTG ATGTCATTCTCCACAAGGTATTTTTGCAAGGCTACCAGTTACATTTGACAAGTCTGTGCA ATGGATCAAAATCAGAAGAGATGATTCAACTTGGTGACCAAGAAGTTTCTGAGCTTTGTG GCCTACCAAGGGAGAAACTGGCTGCAGCAGAGCGAGTACTTCGTTCCAACATGGACATCC AAGCCACAAAAACATTGCTGCATAGTCTTGGGACTCTGGCCCAGGAGCTGTTCAGCATGA GAAGCTGGAGTGACATGCGACAGGAGGTGATGTTTCTGACCAATGTGAACAGCTCCAGCT GGCTGAAGATCAAGTCTCTCAACTGGTATGAGGACAACAACTACAAAGCCCTCTTTGGAG GCAATGGCACTGAGGAAGATGCTGAAACCTTCTATGACAACTCTACAACTCCTTACTGCA ATGATTTGATGAAGAATTTGGAGTCTAGTCCTCTTTCCCGCATTATCTGGAAAGCTCTGA AGCCGCTGCTCGTTGGGAAGATCCTGTATACACCTGACACTCCAGCCACAAGGCAGGTCA TGGCTGAGGTGAACAGACCTTCCAGGAACTGGCTGTTCCATGATCTGGAAGGCATGT GGGAGGAACTCAGCCCCAAGATCTGGACCTTCATGGAGAACAGCCAAGAAATGGACCTTG TCCGGATGCTGTTGGACAGCAGGGACAATGACCACTTTTGGGAACAGCAGTTGGATGGCT TAGATTGGACAGCCCAAGACATCGTGGCGTTTTTGGCCAAGCACCCAGAGGATGTCCAGT CCAGTAATGGTTCTGTGTACACCTGGAGAGAGCTTTCAACGAGACTAACCAGGCAATCC GGACCATATCTCGCTTCATGGAGTGTGTCAACCTGAACAAGCTAGAACCCATAGCAACAG AAGTCTGGCTCATCAACAAGTCCATGGAGCTGCTGGATGAGAGGAAGTTCTGGGCTGGTA TTGTGTTCACTGGAATTACTCCAGGCAGCATTGAGCTGCCCCATCATGTCAAGTACAAGA TCCGAATGGACATTGACAATGTGGAGAGGACAAATAAAATCAAGGATGGGTACTGGGACC TGCAGGATGTGGTGGAGCAGCAATCATCAGGGTGCTGACGGCACCGAGAAGAAAACTG

GTGTCTATATGCAACAGATGCCCTATCCCTGTTACGTTGATGACATCTTTCTGCGGGTGA TGAGCCGGTCAATGCCCCTCTTCATGACGCTGGCCTGGATTTACTCAGTGGCTGTGATCA TCAAGGGCATCGTGTATGAGAAGGAGGCACGGCTGAAAGAGACCATGCGGATCATGGGCC TGGACAACAGCATCCTCTGGTTTAGCTGGTTCATTAGTAGCCTCATTCCTCTTTGTGA GCGCTGGCCTGCTAGTGGTCATCCTGAAGTTAGGAAACCTGCTGCCCTACAGTGATCCCA GCGTGGTGTTTGTCTTCCTGTCCGTGTTTGCTGTGGTGACAATCCTGCAGTGCTTCCTGA TTAGCACACTCTTCTCCAGAGCCAACCTGGCAGCAGCCTGTGGGGGCATCATCTACTTCA CGCTGTACCTGCCCTACGTCCTGTGTGTGGCATGGCAGGACTACGTGGGCTTCACACTCA AGATCTTCGCTAGCCTGCTGTCTCCTGTGGCTTTTGGGTTTTGGCTGTGAGTACTTTGCCC TTTTTGAGGAGCAGGGCATTGGAGTGCAGTGGGACAACCTGTTTGAGAGTCCTGTGGAGG AAGATGGCTTCAATCTCACCACTTCGGTCTCCATGATGCTGTTTGACACCTTCCTCTATG GGGTGATGACCTGGTACATTGAGGCTGTCTTTCCAGGCCAGTACGGAATTCCCAGGCCCT GGTATTTTCCTTGCACCAAGTCCTACTGGTTTGGCGAGGAAAGTGATGAGAAGAGCCACC AGCTGGGCGTGTCCATTCAGAACCTGGTAAAAGTCTACCGAGATGGGATGAAGGTGGCTG GAGCGGGGAAGACGACCATGTCAATCCTGACCGGGTTGTTCCCCCCGACCTCGGGCA CCGCCTACATCCTGGGAAAAGACATTCGCTCTGAGATGAGCACCATCCGGCAGAACCTGG GGGTCTGTCCCCAGCATAACGTGCTGTTTGACATGCTGACTGTCGAAGAACACATCTGGT TCTATGCCCGCTTGAAAGGGCTCTCTGAGAAGCACGTGAAGGCGGAGATGGAGCAGATGG CCCTGGATGTTGGCTTCAAGCAAGCTGAAAAGCAAACAAGCCAGCTGTCAGGTG GAATGCAGAGAAAGCTATCTGTGGCCTTTGTCGGGGGGATCTAAGGTTGTCATTC TGGATGAACCCACAGCTGGTGTGGACCCTTACTCCCGCAGGGGAATATGGGAGCTGCTGC TGAAATACCGACAAGGCCGCACCATTATTCTCTCTACACACCACATGGATGAAGCGGACG AATCCTCCCTCAGTTCCTGCAGAAACAGTAGTAGCACTGTGTCATACCTGAAAAAGGAGG  ${f ACAGTGTTTCTCAGAGCAGTTCTGATGCTGGCCTGGGCAGCGACCATGAGAGTGACACGC}$ TGACCATCGATGTCTCTGCTATCTCCAACCTCATCAGGAAGCATGTGTCTGAAGCCCGGC TGGTGGAAGACATAGGGCATGAGCTGACCTATGTGCTGCCATATGAAGCTGCTAAGGAGG GAGCCTTTGTGGAACTCTTTCATGAGATTGATGACCGGCTCTCAGACCTGGGCATTTCTA GTTATGGCATCTCAGAGACGACCCTGGAAGAAATATTCCTCAAGGTGGCCGAAGAGAGTG

GGGTGGATGCTGAGACCTCAGATGGTACCTTGCCAGCAAGACGAAACAGGCGGGCCTTCG GGGACAAGCAGAGCTGTCTTCGCCCGTTCACTGAAGATGATGCTGCTGATCCAAATGATT CCTACCAGGTGAAAGGCTGGAAACTTACACAGCAACAGTTTGTGGCCCTTTTGTGGAAGA GACTGCTAATTGCCAGACGGAGTCGGAAAGGATTTTTTGCTCAGATTGTCTTGCCAGCTG TGTTTGTCTGCATTGCCCTTGTGTTCAGCCTGATCGTGCCACCCTTTGGCAAGTACCCCA GCCTGGAACTTCAGCCCTGGATGTACAACGAACAGTACACATTTGTCAGCAATGATGCTC CTGAGGACACGGGAACCCTGGAACTCTTAAACGCCCTCACCAAAGACCCTGGCTTCGGGA GGACCACTGCCCCAGTTCCCCAGACCATCATGGACCTCTTCCAGAATGGGAACTGGACAA TGCAGAACCCTTCACCTGCATGCCAGTGTAGCAGCGACAAAATCAAGAAGATGCTGCCTG TGTGTCCCCCAGGGGCAGGGGGGCTGCCTCCTCCACAAAGAAAACAAAACACTGCAGATA TCCTTCAGGACCTGACAGGAAGAACATTTCGGATTATCTGGTGAAGACGTATGTGCAGA TCATAGCCAAAAGCTTAAAGAACAAGATCTGGGTGAATGAGTTTAGGTATGGCGGCTTTT CCCTGGGTGTCAGTAATACTCAAGCACTTCCTCCGAGTCAAGAAGTTAATGATGCCATCA AACAAATGAAGAAACACCTAAAGCTGGCCAAGGACAGTTCTGCAGATCGATTTCTCAACA GCTTGGGAAGATTTATGACAGGACTGGACACCAGAAATAATGTCAAGGTGTGGTTCAATA ACAAGGGCTGGCATGCAATCAGCTCTTTCCTGAATGTCATCAACAATGCCATTCTCCGGG CCAACCTGCAAAAGGGAGAACCCTAGCCATTATGGAATTACTGCTTTCAATCATCCCC TGAATCTCACCAAGCAGCAGCTCTCAGAGGTGGCTCTGATGACCACATCAGTGGATGTCC TGATCCAGGAGCGGGTCAGCAAAGCAAAACACCTGCAGTTCATCAGTGGAGTGAAGCCTG TCATCTACTGGCTCTCTAATTTTGTCTGGGATATGTGCAATTACGTTGTCCCTGCCACAC TGGTCATTATCATCTTCATCTGCTTCCAGCAGAAGTCCTATGTGTCCTCCACCAATCTGC CTGTGCTAGCCCTTCTACTTTTGCTGTATGGGTGGTCAATCACACCTCTCATGTACCCAG CCTCCTTTGTGTTCAAGATCCCCAGCACAGCCTATGTGGTGCTCACCAGCGTGAACCTCT TCATTGGCATTAATGGCAGCGTGGCCACCTTTGTGCTGGAGCTGTTCACCGACAATAAGC TGAATAATATCAATGATATCCTGAAGTCCGTGTTCTTGATCTTCCCACATTTTTGCCTGG GACGAGGGCTCATCGACATGGTGAAAAACCAGGCAATGGCTGATGCCCTGGAAAGGTTTG GGGAGAATCGCTTTGTGTCACCATTATCTTGGGACTTGGTGGGACGAAACCTCTTCGCCA TGGCCGTGGAAGGGGTGTTCTTCCTCATTACTGTTCTGATCCAGTACAGATTCTTCA TCAGGCCCAGACCTGTAAATGCAAAGCTATCTCCTCTGAATGATGAAGATGAAGATGTGA GGCGGGAAAGACAGAGAATTCTTGATGGTGGAGGCCAGAATGACATCTTAGAAATCAAGG AGTTGACGAAGATATATAGAAGGAAGCGGAAGCCTGCTGTTGACAGGATTTGCGTGGGCA TTCCTCTGGTGAGTGCTTTGGGCTCCTGGGAGTTAATGGGGCTGGAAAATCATCAACTT TCAAGATGTTAACAGGAGATACCACTGTTACCAGAGGAGATGCTTTCCTTAACAAAAATA GTATCTTATCAAACATCCATGAAGTACATCAGAACATGGGCTACTGCCCTCAGTTTGATG CCATCACAGAGCTGTTGACTGGGAGAGAACACGTGGAGTTCTTTGCCCTTTTGAGAGGAG TCCCAGAGAAGAAGTTGGCAAGGTTGGTGAGTGGGCGATTCGGAAACTGGGCCTCGTGA AGTATGGAGAAAAATATGCTGGTAACTATAGTGGAGGCAACAAACGCAAGCTCTCTACAG CCATGGCTTTGATCGGCGGGCCTCCTGTGGTGTTTTCTGGATGAACCCACCACAGGCATGG ATCCCAAAGCCCGGCGGTTCTTGTGGAATTGTGCCCTAAGTGTTGTCAAGGAGGGGAGAT CAGTAGTGCTTACATCTCATAGTATGGAAGAATGTGAAGCTCTTTGCACTAGGATGGCAA TCATGGTCAATGGAAGGTTCAGGTGCCTTGGCAGTGTCCAGCATCTAAAAAATAGGTTTG GAGATGGTTATACAATAGTTGTACGAATAGCAGGGTCCAACCCGGACCTGAAGCCTGTCC AGGATTTCTTTGGACTTGCATTTCCTGGAAGTGTTCTAAAAGAGAAACACCGGAACATGC TACAATACCAGCTTCCATCTTCATTATCTTCTCTGGCCAGGATATTCAGCATCCTCTCCC AGAGCAAAAAGCGACTCCACATAGAAGACTACTCTGTTTCTCAGACAACACTTGACCAAG TATTTGTGAACTTTGCCAAGGACCAAAGTGATGACCACTTAAAAGACCTCTCATTAC ACAAAAACCAGACAGTAGTGGACGTTGCAGTTCTCACATCTTTTCTACAGGATGAGAAAG TGAAAGAAGCTATGTATGAAGAATCCTGTTCATACGGGGTGGCTGAAAGTAAAGAGAA  $\tt CTAGACTTTCCTTTGCACCATGTGAAGTGTTGTGGAGAAAAGAGCCAGAAGTTGATGTGG$ GAAGAAGTAAACTGGATACTGTACTGATACTATTCAATGCAATGCAATTCAATGCAATGA AAACAAAATTCCATTACAGGGGCAGTGCCTTTGTAGCCTATGTCTTGTATGGCTCTCAAG TGAAAGACTTGAATTTAGTTTTTTACCTATACCTATGTGAAACTCTATTATGGAACCCAA  $\tt GGGGTTGCAACAATAATTCATCAAGTAATCATGGCCAGCGATTATTGATCAAAATCAAAA$ GGTAATGCACATCCTCATTCACTAAGCCATGCCATGCCCAGGAGACTGGTTTCCCGGTGA CACATCCATTGCTGGCAATGAGTGTGCCAGAGTTATTAGTGCCAAGTTTTTCAGAAAGTT TGAAGCACCATGGTGTCATGCTCACTTTTGTGAAAGCTGCTCTGCTCAGAGTCTATCA ACATTGAATATCAGTTGACAGAATGGTGCCATGCGTGGCTAACATCCTGCTTTGATTCCC TCTGATAAGCTGTTCTGGTGGCAGTAACATGCAACAAAAATGTGGGTGTCTCCAGGCACG GGAAACTTGGTTCCATTGTTATATTGTCCTATGCTTCGAGCCATGGGTCTACAGGGTCAT CCTTATGAGACTCTTAAATATACTTAGATCCTGGTAAGAGGCAAAGAATCAACAGCCAAA  $\tt CTGCTGGGGCTGCAACTGCTGAAGCCAGGGCATGGGATTAAAGAGATTGTGCGTTCAAAC$ CTAGGGAAGCCTGTGCCCATTTGTCCTGACTGTCTGCTAACATGGTACACTGCATCTCAA GATGTTTATCTGACACAAGTGTATTATTTCTGGCTTTTTGAATTAATCTAGAAAATGAAA

Figure 3 Promoter, 8797 bp

Distances numbered using first base of promotor as -1

Name

32	33	34	35	36	37
	sense	sense	antisense	sense	sense
	100	100	100	100	100
Target: (W) {0,8}WRGGTCA	CTGGGCAAGGATGGGTCA	TGGGCAAGGATGGGTCA	AAAAAGCACC <b>AAGGTCA</b>	AGAAGATGCCAGGGTCA	GAGGAGATGG <b>AGGGTCA</b>
	-8435	-8434	-7025	-3989	-2638

ROR

Exon 1, 303 bp

Distance	s numbered us	Distances numbered using start of Exon 1 as + 1			
Name	Pos. of lst base in +	Hit Site	% Match	Strand 0	Q ID NO.
LXRE		Target: AGGTCA(NNN)AGGTCA			7
DR4	4	CCGAGCGCAGAGGTTACTATCGGTCA	92	antisense	38
DR1		None		_	
PPAR					
DR2		None			
DR1		None			
SREBP		None			
ROR		None			

Positions numbered using the first position in intron 1 as + 1

Name	Pos. of 1st base in +	Hit Site	Matc	Strand	SEQ ID N
LXRE		Target: AGGTCA(NNNN)AGGTCA			7
DR4	458	gccaattccca <b>ggtca</b> gaacag <u>a</u> cca	88	antisense	3.9
DR1		None			
PPAR		Target: NNNNNN (A) NN (T) TGACCT (N/NN}TGACCT	ACCT		12
DR2		None			
DR1		None			
SREBP		Target: ATCACCCCAC			19
	326	ggacctgcag <b>ctctccccac</b>	80	antisense	4 0
ROR		Target: (W){0,8}WRGGTCA			32
	17	AACGCCAAGTCA	94	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	4
	161	GAGCTCGTACTAGGACA	94	antisense	42
	181	GCAGAGTCCTGGGGTCA	94	antísense	43
	181	CGCAGAGTCCTGGGGTCA	94	antisense	44
	478	AGCCAATTCCCAGGTCA	94	antisense	45
	559	ACGGACCGTTTGGGACA	94	antisense	46
	93.5	CACGGACCGTTTGGGACA	94	antisense	47
	0 W 0 W 0 W	CCACGGACGIIIGGGACA ACTAGAGGCCTTGGGATCT	y 0	antisense	24. z
	065	CTAGAGGCCTTGGGTCT	94	sense	50
	612	CCCTACCCCTCAGGTCA	94	antisense	51
	612	TCCCTACCCCTCAGGTCA	94	antisense	52
	668	GSTCTGCGCCAGGGACA	94	antisense	53
	864	TITTAGTGAGGTTA	94	sense	54

Positions numbered using the first base "5 to the start of Exon 2 as -1

		7	55 55 57 58	12	59 60 62	19	. 64 65 65 67 68 69 70 72
Exon 2 as -1	Strand		sense sense antisense antisense	Ð	antisense antisense sense sense		sense antisense antisense sense sense sense sense antisense antisense
of	Mat		n w w w n w w w	u}TGAC	9 9 9 8		06 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
Positions numbered using the first base "5 to the start	Hit Site	Target: AGGICA(NNNN)AGGICA	TGAGGCAGGTAGATCACTTGAGGTCA CGAGGCTGGCGGATCACCTGAGGTCA AAGCCTACAAGGTTACTGAAGGCCA AGAGGTGGCGGATCACTGAGGTCA AGAGGTGGCGGATCACTGAGGTCA	Target: NNNNNN (A) NN (T) TGACCT (N/NN) TGACCT NONE	CTCGAT (T) TC (C) TGACCTCGTGATCC CAAAAC (A) TT (G) TGCCCTTTTGAACT GCGCTA (G) GG (T) TGTCCTCATTACCT CTCGAT (T) TC (T) TGACCTCGTGATCC	Target: ATCACCCCAC	GTGAGCTGAGATCACCACC TTCAAGGATGATCACCACAT GGCTCAAGTGATCCTCCCAC GTGAGCCGAGATCGCGCCAC GTGAGTTATGATCATGCCCAC CCACTCTTTGAACAACCCAC AAATGTGACAATCTCCACAC AAATGTGACAATCTCCACAC CCTTTATATCAACCACCCCCCCCCC
aumbered us	Pos. of 1st base in +		-7188 -11050 -7670 -4696		-10281 -5996 -932 -597		-7009 -11869 -11616 -10100 -8584 -5591 -4684 -4128 -2524
Positions	Name	LXRE	DR4 DR4 DR4 DR4 DR4	PPAR DR1	DR2 DR2 DR2 DR2	SREBP	

Page 5 of 6

Name

ROR

$\prod$				Ţ	L		BAC	1 .		-						-			I		-											-		7
		$\downarrow$		_	_		9 BC11	3		Ţ		3		3	Ц	3		3	$\perp$	¥	]		ž			4	š	3		3	$\perp$	3		
-	$\coprod$	+	$\coprod$	-	-		NL20	het		¥	$\vdash$	¥		¥		¥	++	¥	$\perp$	¥	]	╀┤	ž	-	¥	1	╁┤	3	++	ded		¥	$\square$	_
-	$\downarrow \downarrow$	$\downarrow$		-	1	NL16-	212	3		3		13.5		¥		¥		ž	$\downarrow$	¥	1		W	_	¥	]	É	3		3		¥		_
	$\prod$				Ļ		P04	3		¥		¥		¥	Ц	¥		3	$\perp$	¥	3		¥			3		3		3				
	$\sqcup$	$\downarrow$		-	1	_	2 CZ01	¥		3	$\vdash$	3	$\parallel$	×	$\parallel$	ž	╁	¥	-	¥	1	+	¥	_	¥	1	++	Shate		3	++	×	<del>                                     </del>	4
<u> </u>	$\downarrow \downarrow$	_	L.	-	1	L	1 0012	3		¥		¥		¥	-	¥	$\parallel$	¥	1	¥	]		¥	_	*	3		3		×		¥		4
		_			-	_	001	3		¥		¥		¥		¥	Ш	¥	_	¥	]		¥	_	¥	3		3		*		¥		
		$\perp$					NL27	¥		3		¥		¥		hat		¥	1	¥	3		E .		¥	3		3		ž		ž		
		_			L		NL16	¥		¥		¥		×		¥	1	het	1	¥	7		¥		¥	3		3		3		¥		
-	$\coprod$	$\perp$	-	$\downarrow$	Ļ		v TDS	3		ž	$\coprod$	¥	$\sqcup$	¥		¥	$\vdash$	¥	4	(i)	1	"	3	-	¥	3	++	*	++	3	++	¥		_
	$\coprod$	1	-	1	Ļ		MQT	¥	Ц	1		¥		¥	Ц	¥	$\sqcup$	¥	$\downarrow$	¥	3	++	*	_	¥	3	┼	¥	₩	3	$\prod$	¥		4
	$\coprod$	$\downarrow$	$\parallel$	+	1		A RLA	¥	$\square$	3		M	$\parallel$	t Life	Ц.	×	$\sqcup \bot$	3	1	3	3	14	¥	-	¥	3	++	*	11	*		¥		_
$\vdash$	H	+	$\vdash$	+	Se		MGA ALA	W	H	w	H	her	$\dashv$	w	H	w		w	+	W	73	╁┼	w	+	w	W	++	W X	++	W	+ +-	w	+	+
	$\dagger$	$\dagger$		$\dagger$	Genotypes	-	ABE	¥		¥	+	¥		¥		ž	++	¥		¥	3	1-1	¥	+	¥	Jan		ž	$\parallel$	¥	++	¥		1
	$\prod$	$\dagger$		t	T			$\dagger$		+		- m	$\parallel$			$\dagger$			-	pje		$\parallel$	628	$\dagger$	93-4	T	ТТ		H	$\dagger$	Н			1
					AA change			R587W		Q597R		DeltaL693		R909Stop		T9291		M1091T		Not applicable	C1477R		Frameshift1628		Delta(E,D)1893-4	R2144Ston		2145Stop		P2150L		2203Stop		
					Coding	Nucl. Change		C2154T		A2185G		DeltaCTT2472-2474		C3120T		C3181T		T3667C		IVS24 + 1G to C	T4824C.		GG5277-5278C		DeltaAATATG6073-8	C6825T		DeltaC6825		C6844T		CTC6952-6954TT		
					Change in codon	or non-coding		CGG-TGG		CAG-CGG		Deletion of L (CTT) D		CGA-TGA		ACC-ATC		ATG-ACG		NA (G to C in splice junct.)	161-061		NA (GG to C)		Deletion of E,D (AATATG) D	CGA-TGA		NA (Deletion of C)		CCG-CTG		NA (CTC to TT)		
					SEQ ID NO			84	82	98	87	88	88	06	91	92	93	94	6	96	86	66	100	101	102	104	105	106	107	108	109	110	=	
					Sequence difference/context			TTGAGGACATGCGGTACGTCTGG	TTGAGGACATGTGGTACGTCTGG	GCCTACTTGCAGGATGTGGTG	GCCTACTTGCGGGATGTGGTG	CCTCATTCCTCTTGTGAGCG	CCTCATTCCT/CTTGTGAGCG	AAAAGTCTACCGAGATGGGAT	AAAAGTCTACTGAGATGGGAT	GGCCAGATCACCTCCTTG	GGCCAGATCATCTCCTTCCTG	ACACACCACATGGATGAAGCG	ACACACACACGGAIGAAGCG	CCTGGAAGAAGTAAGT CCTGGAAGAACTAAGT	GCTGCCTGTGTGTCCCCCAGG	GCTGCCTGTGCGTCCCCCAGG	TAGCCATTATGGAATTACTGCT	TAGCCATTATCAATTACTGCT	GATGAAGATGAAGATGTGAGGCGGGA GATGAAGATG/TGAGGCGGGA	AATAGTTGTACGAATAGCAGG	AATAGTTGTATGAATAGCAGG	ATAGTTGTACGAATAGCAGG	ATAGTTGTA/GAATAGCAGG	GGGTCCAACCCGGACCTGAA	GGGTCCAACCTGGACCTGAA	CATTATCTTCTGGCCAGGA	CATTATCTTTTGGCCAGGA	
								Wildtype	Variant	Wildtype	Mutation	Wildtype	Mutation	Wildtype	Mutation	Wildtype	Mutation	Wildtype	Mutation	Wildtype	Wildfyng	Mutation	Wildtype	Mutation	Wildtype	Wildtyne	Mutation	Wildtype	Mutation	Wildtype	Variant		Mutation	
				Mumberine	based on	AJ012376.1		1699		1730	П	2017-2019	Mutation	2665		2726		3212		£	4369	1 1	4822-23		5618-5623	6370		6370		6389		6497-6499		
				Mumbarine	+-	•	et al., 2000	2154		2185		2472-2474		3120		3181		3667		(+)	4824		5277-5278		6073-6078	6825		6825		6844		6952-6954		1
Figure 4				Wutations:	Exon			Exon 13		Exon 13		Exon 14		Exon 18		Exon 18		Exon 22		Intron 24	Exon 30		Exon 35		Exon 41	Exon 48		Exon 48		Exon 48		Exon 48		1

GGAACTAGTCCCGCCAAAAA  GGAACTAGTCCCGCCAAAAA  GGAACTAGTCTCGGCAAAAA  CCGGGACCCGCCAGAGGCC  CCGGGACCCGCCAGGGCC  ACCACCCCGGCACCGGCAGGCC  ACCACCCTGGGGTCCTGTATCACAACC  CTGGGTTCCTATATCACAACC  CTGGGTTCCTATATCACAACC  CTGGGTTCCTATATCACAACC  CTGGGTTCCTAAGGAAACTG  GGCCTACCAAGGGGGGCGC  CTGGGTTCCTAAGGAAACTG  GGCGCATCCAAGGGAAACTG  GGCGCATCCAAGGGAAACTG  GGCGCATCCAAGGGAAACTC  CGGGCATCCAAGGGAAACTC  GGCGCATCCAAGGGAAACTC  GGCGCATCCAAGGGAAACTC  GGCGCATCCAAGGGAAACTC  GGCGCATCCAAGGAAACTC  GGCGCATCCAAGGGAAACTC  GGCGCATCCAAGGAACTCA  TGACTCCAAGGAACAACAC  GGAGGGGGGGGAACAACAC  GGCGGCTTCCAAGATCTTCGCTg  TCACACTCCAAGATCTTCGCTg  CCTGGGCTTCCAACATCTTCGCTG  CCTGGGCTTCCAACATCTTCGCTG  CCTGGGCTTCCAAGATCTTCGCTG  CCACTTCCAAGATCTTCGCTG  GAAGAGAATATCAGAAAG  GAAGAGAATATCAGAAAC  GAAGAGAATATCAGAACC  GCACTTCCATCACACACACC  GGAGGAATGATCACAACAC  GAAGAGAATATCAGAAAC  GAACAACGTTCCAACACACC  CCTGGGCTTCCAACATCTTCGCTG  CCTGGGCTTCCAACATCTCCAACAC  CCTGGGCTTCCAACATCTTCGCTG  CCTGGGCTTCCAACATCTTCGCTG  CCTGGGCTTCCAACATCTTCGCTG  CCTGGGCTTCCAACATCTTCGCTG  CCTGGGCTTCCAACATCTTCGCTG  CCTGGGCTTCCAACACACC  CCTGGGCTTCCAACACACC  CCTGGGCTTCCAACACACC  GGAGGAACTCAAGAACTTCGCAACAC  CCTGGGCTTCCAACACACC  CCTGGGCTTCCAACACC  CCTGGGCTTCCAACACC  CCTGGGCTTCCAACACC  CCTGGGCTTCCAACACC  CCTGGGCTTCCAACACC  CCTGGGCTTCCAACACC  CCTGGGCTTCCAACACC  CCTGGGCTTCCAACACC  CCTGCCTACCACCTCAACACC  CCTGCCTTCCAACACC  CCTGCCTACCACCTCAACACC  CCTGCCTTCCAACACC  CCTGCCTTCCAACACC  CCTGCCTTCCAACACC  CCTGCCTTCCAACACC  CCTGCCTTCCAACACC  CCTCCACTCCA
ACCAGCAGGGGGTCCCTGC   116
GGAACTAGTCCGGCAAAAA  GGAACTAGTCTCGGCAAAAA  GGAACTAGTCTCGGCAAAAA  GGAACTAGTCTCGGCAAAAA  CCGGGGACCGCGGGGGCC  CCGGGGACCGGCGGGGCC  ACCAGCCACGGCGTGCTGCTC  ACCAGCCACGGCGTGCTGCTG  ACCAGCCTGGGCTGCTGCTG  ACCAGCTGGGCTGCTGCTG  ACCAGCTGGGCTGCTGCTG  CTGGGTTCCTATATCACAACC  GGCCTACCAAGGGAAACTG  GGCCTACCAAGGGAAACTG  GGCCTACCAAGGGAACTG  GGCGCATCCAAGGGAAACTG  GGCGCATCCAAGGGAAACTG  GGCGCATCCAAGGGAACTG  GGCGCATCCAAGGGAACTCA  TGACTCCAGGGGGGGGGG
Varient Varient Varient Varient Varient Varient Varient Varietype Polymorph Varietype Polymorph Wildtype Wildtype Wildtype Wildtype Wildtype Wildtype

## Page 2 of 6

Ì				T
	_	_	¥	
	_	_	W	1
	_	_	w	1
I	_			-
l	_		W	4
	_		W	-
1			w	_
	_		w	
			J/M	
	_		wt	
		_	w	
			wt	
ľ			w	
	_		het	
			wţ	
	_		¥	
			ange	
			No aa chan	
ŀ			ž	_
			Ļ.	
			C6842T	
l	_			
			۲¥	
			AAC-AA	
	_	_	-	
	147		148	149
	_	H	_	
	CAAT		CCTGA	SACCTGA
	CCAO		Ä	GGAC
1	GTGC		AGGGTCCAACCCGC	AATC
	<b>CCTATGTGTG</b>		SGTC	зетс
	55		CAG	CAG
	ųd.		_	fg.
	Polymorp		Wildtype	Polymorp
	-		V V	٦
			6387	
	-		2	П
			6842	
			8	П
			xon 48	

Page 30 FG

	П	BAC		-				1			Commence.	1.1	Wash and the			jej	igu				-3			199
		BC11		G/G		ງ ງ												¥		Teg .	EE .	82		A Company
		NL20		8		3		-				C day						3	¥	*	X	3		44
		NL16-		9/9		5												×				*		
		JP04		9/9														igg.	1000	ig.		¥		
		CZ04		200		9 3									122	250		w	¥	¥		3		
		QC12		90		უ ა			Biomica							3500		¥	HeA.	TE I		¥		
		OC11		9		_ ဗ			To Chandell Disc									W	2	¥		¥		
		NL27	1			9		no ins		B C	SA	976	N.C		9			w	¥	3		3		
		NL16	1	9/8	( 33	8		no ins		& A	¥	A/A	A'A		A/A			¥	70	2		¥		
	+	TDS		98		99		-	1 1									¥	theit	¥		¥		
		MQL		9/9		8		sui ou	П	AN I	A/A	A/A	A/A		A/A			¥	¥	w		W.		
		RIA A	++	9		<u>့</u> ၅	Г	*******										¥	ia.	¥		¥	_	
		AIA		_ဗွ		9/9 9/9	_	_										¥	<b>(2</b> )	3		¥		
	Genotypes	MGA		8		0		_										¥	Tet & her	¥		¥		
	Geno	ARF		90	-	-							4					¥				*		
	change			licable		icable		icable		licable	ilicable	licable	Not applicable		olicable	olicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
	AA ch			Not applicable		Not applicable		Not applicable		Not applicable	Not applicable	Not applicable	Not app		Not applicable	Not applicable	Not app	Not ap	Not ap	Not ap	Not ap	Notap	Not ap	Not ap
		ange		aple		aple		aple		caple	cable	cable	cable		cable	cable	cable	Icable	cable	Icable	Icable	Icable	licable	licable
	Coding	Nucl. Change		Not applicable		Not applicable		Not applicable		Not applicable	Not applicable	Not applicable	Not applicable		Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
	9			+		$\parallel$	+							-		and T	and T						and G	3 and T
	Change in non-coding			O				ertlon		g	4	4	U		U	Down; G	es unknown; G	rtion	Hion	<	⊢	etlou	ies unknown; C and	des unknown; G
	on no			G to C		C to G		CCT Insertion		A to G	G to A	G to A	A to C		A to	les unknown;		A insertion	G insertion	T to A	CtoT	CA defetion	ses unk	cles unk
	Chan							Ö								Frequenci	Frequenc						Frequenci	Frequenci
				150	151	152	153	154	8	156 157	158	160	162	83	164	166 Fr	167 Fr	168	170	172	174	176	178 F	179 F
					1		-		-					+		-			$\frac{1}{1}$				+	
				ACCG	ACCG	ည	စ္တ	AAS	4674	366	ТТСТТ	CGATT	AAG	Ag Ag	156 166T	GGA	SATT	ACG	TTGT	CAGT	SGCTC		CTTA	AGAGA
				CGCAG	CGCAC	09999	29999	CACGA	3	GAGTA	GGAGG	STTCAG	TAAGG	TAAGG	AGAGA	GATTA	I III	SCCTG SCCTG	SCTCA SCTCA	TTAAC	TGCAC	GAGCC	GTGT	ACAGA
	SectionCo			CGGGGGAAGGGCACGCAGACCG	966GA	GGCCGGGAACGGGGCGG	GAAG	AGTATCCCT/TGTTCACGAGAA	3	GTGACACCCAACGGAGTAGGG GTGACACCCAGCGGAGTAGGG	TATGTGCTGACCATGGGAGCTTGTT TATGTGCTGACCGTGGGGAGCTTGTT	CCTCCGCCTGCCAGGTTCAGCGATT	GAAAATTAGTATGTAAGGAAG	СТСТВ	CATTITCTTAGAAAAGAGGGT CATTITCTTAGAGAAGAGGGT	TTTAAAGGGGKTGATTAGGA	GAAGAAATTTKTTTTTTGATT	TCTGTCCCCATCCCTGACG TCTGTCCCCAATCCCTGACG	AGGAGCCAAA/CGCTCATTGT AGGAGCCAAAGCGCTCATTGT	AAGCCACTGTTTTTAACCAGT AAGCCACTGTATTTAACCAGT	GCTCCCTCTAGCATGCAGGCTC GCTCCCTCTAGTATGCAGGCTC	TCACA TICAGA	GCGCAGTGCSCTGTGTCCTTA	СТСТТСТСТТАКСАСАВАВАВА
	0			GGAAC	GGAAC	9900	9900	FATCCC	3	SACACC	гаста/ гаста/	) ) ) ) ) ) )	AAATT/	AAATT,	TTTCT	AAAG	1GAAA	TGTCC	SAGCC	SCCAC	CCCTC	СТТС СТТС	GCAGT	тсте
				5550	9990	S	8	AG	AG A	GT0	TATG	0000	GA	ð	2 2	F	Ø.	5 5	AGC	¥ ¥	SCI	TGCCT	8	CTC
				- t	t	7	<u> </u>	96	Polymorph	Wildtype	Wildtype	Wildtype	уре	Polymorph	Wildtype	Polymorph	Polymorph	Wildtype	Wildtype	Widtype Polymorph	Wildtype	Wildtype TTGCCTGTTTCTCACAGAGCC Polymorph TTGCCTGTTTCT/CAGAGCC	Potymorph	Рогутогр
(SNP):		₽ ⊆	6.1	Variant	Variant	Variant	Variant	$\neg$	Polys	111			$\Box$	П	7-1-1		1		-       1	111	111			
Non-coding Polymorphisms (SNP):	Manhoritan	based on	AJ012376.1	¥		NA		(-) 1435		(-) 1367	(-) 1299	766 (-)	(-) 733		(-) 634	(+) 2383	(+) 3035	(-) 15	(-) 42	(+) 24	(-) 83	(-) 4-5	(+) 2000	(+) 118
kmor			Pullinger et al., 2000	(-) 191	$\prod$	(-) 17		(-) 1163		(-) 1095	(-) 1027	(-) 720	(-) 461		(-) 362	(+) 2383	(+) 3035	(-) 15	(-) 42	(+) 24	(-) 83	(-) 4-5	(+) 2000	(+) 118
ng Po		pas	et al.			-	Ц	Ξ	_	Ξ	Ξ		±		<del>"</del>	€ 	Į (Ē)							
n-codi		5		Promotor		Promotor		Intron 0		Intron 0	Intron 0	Intron 0	Intron 0		Intron 0	Intron 7	Intron 7	Intron 7	Intron 9	Intron 13	Intron 13	Intron 15	Intron 17	Intron 21
2				Pror		Pror		Infrc		ĮĘ.	Intr	Į	l tr		at l	inf.	i i	宣	直	ţc	直	<u>    ਵੱ   </u>	트	<u>  [Ĕ</u>

			¥	\$		3 - 2 1			1 1	1 7 6	1 1 1			1 - 1 1
4		11		111					¥		¥	iter item		
71	1		¥	¥	ž				legi.		¥			
			let	¥	hek				fiet. A fieth liketh	23	¥	3		
	1 mg	23.65	¥	¥	nel net				hells	100 m	iei i	¥		X
			¥	¥	¥		10		₹	20	¥	3		
			¥	1 Jet	¥				¥		¥	Hel		
			¥	¥	¥				¥		¥	3		
			¥	¥	¥				ag.		¥	¥		
			<u>@</u>	¥	1961				¥		¥	3		
	104		*	¥	¥				¥		¥			
			¥	¥	¥				¥		¥	3		
			¥	ig I	¥				W		¥	¥		
99/36/			¥	net her	¥				¥		¥	¥		
			¥	Tell	¥.	-			¥		¥	¥		
			¥	¥	¥				¥	-111	¥	3		
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable		
Not app	Not app	Not app	Not app	Not app	Not ap	Not ap	Not ap	Not ap	Not ap	Not ap	Not ap	Not ap		
able	able	cable	cable	applicable	cable	cable	cable	cable	cable	cable	cable	cable		
Not applicable	Not applicable	Not applicable	Not applicable	Not appli	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable		
	and T		-		+	6			+		+++	+++-		0
cies unknown; A and G	ାଠା	Frequencies unknown; A and G				cies unknown; A and	n; C and	cies unknown; C and T		cles unknown; A and G				icles unknown; A and
unknow	cies unknown;	unknow	A to G	T to G	G to C	unknow	cles unknown; C	unknov	T to C	unknov	A to G	0 0 0		unknov
rencies	selouer	rencies				rencies	neucles	vencies		neucles				nencies
Frequenc	Frequenc	Frequ	+++	+++	+++	Frequenc	Frequenc	Frequent		Frequen			ON.	Frequen
180	181	182	183	186	187	189	190	191	192	194	196 196	198	he gen	199
7	g	4	12 12	-  -  -  -  -  -  -  -  -  -  -  -  -	O O	95	o	စ္	ပ္ရပ္	<u>υ</u>	(2) (2)	88	live to	SAA
AGCCA	ACAG	AATGC	GTCT/	ATTAC	AATGT	ACCC	ACTGA	тств	TTTG	ATAGC	DETTE	9000	relat	AGGAG
CATTCTAGGGRTCATAGCCAT	AAGTACAGTGKGAGGAACAGCG	ATTCCTAAAAARTAGAAATGCA	TTTCTGTTTCAATTCTTGTCTAT	GGCCCTGCCTTATTATTACT GGCCCTGCCGTATTATTACT	CACTGTCTGGGTTTTAATGTC CACTGTCTGGCTTTTAATGTC	TGAGAGAATTRCTTGAACCCGG	TTGCTGAAAYAATCACTGAC	AACCTCAGTTYCCTCATCTGTG	AAGAAGTGGCTTGTATTTTGC AAGAAGTGGCCTGTATTTTGC	AACTGATTTGRTTGGTAYAGCTG	AATAAAGATAATTTCTTTGG AATAAAGATAGTTTCTTTGG	TTCCTGCCCGGACACTCCCGCC TTCCTGCCCCGACACTCCCGCGC	tionec	TTGGGAGGCTRAGGCAGGAGAA
AGGG	AGTGK	AAAAA	TTCA	CTGCC	7CTGG	AATTR	CGAAA	AGTTY	GTGGC	TTTGR	AAGAT/	0000	t posi	GGCTF
SATTCI	4GTAC	TTCCT	TTCTG	20000	CACTG	GAGAG	ттес	ACCTC	AAGAA	ACTGA	AATA	100T	igs no	TGGGA
													cont	
Polymorph	Polymorph	Ројутогрћ	Wildtype	Wildtype	Wildtype	Polymorph	Polymorph	Polymorph	Wildtype Polymorph	Polymorph	Wildtype Polymorph	Wildtype	Polymorphisms in ABC1 BAC sequence contigs not positioned relative to the gene These polymorphisms are all within approximately 200 kb of the ABC1 gene	Polymorph
						77			(+) 18 V	(+) 1665 F	(+) 13 V	(+) 55 V	3AC SE	
(+) 263	(+) 321	(-) 624	(-) 46	06(+)	(-) 25	(+) 732	868 (+)	(+) 234	(£	E	<b>E</b>	£	ABC1 E	
(+) 563	(+) 321	(-) 624	(-) 46	(+)30	(-) 25	(+) 732	(+) 898	(+) 234	(+) 18	(+) 1665	(+) 13	(+) 55	ms in	119
$H \rightarrow$	+	++		+++	+++	+	H	-		++		++++	orphis	99.05.27.contig.119
Intron 21	Intron 24	Intron 29	Intron 30	Intron 31	Intron 32	Intron 33	Intron 33	Intron 34	Intron 43	Intron 43	Intron 47	Intron 48	olym hese po	9.05.27

100	=
	==
ŧ,	=
Ē	f
	=
2:	=
ij.	_
1	
ium mui	
Bi	
	=
¥,	=
ii.	=
mi.	ž
THE THE	
H.	=

Numbering   Numb														$\frac{1}{1}$
inge in codon         Coding         AA change         Genotypes         ABE         MGA ALA RLA         TDW         TDS         NL16         NL27         QC11         QC12         CZ01         JP01           Tron-coding         Nucl. Change         ABE         MGA ALA RLA         TDW         TDW         TDM	Frors in	public segu	ience (diffe	rences be	tween all samples and Genbank e	antry AJ0123	176.1):							1
Numbering Num														
Particular   Par	Constant and a second				Sequence difference/context		Change in codon	Coding	AA change	Genotypes				
Public Seq	EXOUNDED	- (			in cDNA		or non-coding	Nucl. Change					NL16-	
16:18   Public seq   TGTCAGCTGTTACTGGAAGTGG   200   T to C; A to G   No aa change   F		Pullinger	AJ012376.1							MGA ALA RLA	TDS NL16	QC12 CZ01	212 NL20	BC11 BAC
16,16   Public seq   TGTCAGCTGTTACTGGAAGTGG   200   Tto C; A to G   No aa change   F		et al., 2000	+-										+	+
16, 18   Public seq   TGTCAGCTGTTACTGGAAGTGG   200   10 C, A									00004		Dresent in	all camples tested		+
Correct se	Exon 2		16; 18	Public sed	TGTCAGCTGTTACTGGAAGTGG	200	T to C; A to G		No aa cuaude		III III DESCRIT	all samples tested		
705				Correct se	TGTCAGCTGCTGGAAGTGG	201								+
705   Public seq   AGGAGCTGGCCGAAGCCACAA   203   C to T   No aa change   Public seq   AGGAGCTGGCCGAAGCCACAA   203   C corect se   AGGAGCTGGCTGAAGCCACAA   203   C carect se   AATGATGCCACAAACAAATG   204   ACCATC   Thr to lie   Pro to Leu														
4604         Public seq         AGGAGCTGGCTGAAACAAATG         203         ACCATC         Thr to lie         F           4604         Public seq         AATGATGCCACCAACAAATG         204         ACCATC         Thr to lie         F           4883         Public seq         AATGATGCCATCAAACAAATG         205         CCG-CTG         Pro to Leu         F           6 ABB3         Public seq         GAGGTGGCTCTGATGACCACA         207         AGA-AAA         AGB-AAA           6 ABB3         Public seq         TTCCTTAACAGAAATAGTATC         208         AGA-AAA         AGB to to Leu         F           6 ABB3         Public seq         TTCCTTAACAAAATAGTATC         209         AGA-AAA         AGB to to to Leu         F           6 ABB3         Public seq         GGAAGTGTTCCAAAAGAAAA         210         CCA-CTA         F         F           6 ABB3         Public seq         GGAAGTGTTCAAAAGAAAA         210         CCA-CTA         F         F           6 ABB3         Public seq         GGAAGTGTTCAAAAGAAAA         2         CCA-CTA         AGB to	Fyon 7		705	Public sed	AGGAGCTGGCCGAAGCCACAA	202	CtoT		No aa change		Present in	all samples tested		-
4604   Public seq   AATGATGCCACCAACAAATG   204   ACC-ATC   Thr to lie   Thr to li				Correct se	AGGAGCTGGCTGAAGCCACAA	203	2							
4604   Public seq   AATGATGCCACCAACAATG   204   ACC-ATC   Thr to lie														
Correct se   AATGATGCCATCAAACAG 205   Pro to Leu   Pro to Leu	Exon 33		4604	Public sea	AATGATGCCACCAAACAAATG	204	ACC-ATC		Thr to lle		Present in	all samples tested		
4883   Public seq   GAGGTGGCTCGGATGACCACA   206   CCG-CTG   Pro to Leu   Proto Leu   Pro				Correct se	AATGATGCCATCAAACAAATG	205								
4883   Public seq   GAGGTGGCTCCGATGACCACA 206   CCG-CTG   Pro to Leu														
Correct se   GAGGTGGCTCTGATCACACA   207   Arg to Lys	Fxon 35		4883	Public sed	GAGGTGGCTCCGATGACCACA	206	CCG-CTG		Pro to Leu		Present in	all samples tested		1
5861         Public seq         TTCCTTAACAGAAATAGTATC         208         AGA-AAA         Ang to Lys           Correct se         TTCCTTAACAAAAGAGAAA         210         CCA-CTA         Prot to Leu           G443         Public seq         GGAAGTGTTCCAAAAGAGAAA         210         CCA-CTA           Correct se         GGAAGTGTTCTAAAAGAGAAAA         2         CCA-CTA           Footect se         GGAAGTGTTCTAAAAGAGAAAA         2           Gorrect se         AGTAAAAGAGGAACTAGACTTT         3         G to A           Correct se         AGTAAAAGAGGAACTAGACTTT         4				Correct se	GAGGTGGCTCTGATGACCACA	207								+
Set   Public Seq   TUCTTAACAAAATAGTATC   209     Correct se   TTCCTTAACAAAATAGTATC   209     Correct se   TTCCTTAACAAAAGAGAAA   210   CCA-CTA     Pro to Leu				1	TICCITAACACACTATACTA	806	AGA-AAA		Ara to Lvs		Present in	all samples tested		
Correct se	Exon 43		1986	bas plione	CTATAGAGAGAGTATA	900								
6443   Public seq   GGAAGTGTTCCAAAAGAAAA   210   CCA-CTA   Pro to Leu				Correct se	OLUCIO DE CONTROLLO DE CONTROLL									
Correct se   GGAAGTGTTCTAAAAGAGAAAA   2	Exon 48		6443	Public sea	GGAAGTGTTCCAAAAGAGAAA	210	CCA-CTA		Pro to Leu		Present in	all samples tested		
6765         Public seq         AGTAAAGAGGAACTAGACTTT         3         G to A         No aa change           Correct se         AGTAAAAGAGGAACTAGACTTT         4         4				Correct se	GGAAGTGTTCTAAAAGAGAAA	2								
6765         Public seq         AGTAAAGAGGAACTAGACTTT         3         G to A         No as change           Correct se         AGTAAAGAGGAACTAGACTTT         4														
Correct se AGTAAAGAGGAACTAGACTTT	Exon 49		6765	Public seq	AGTAAAGAGGGACTAGACTTT	3	G to A		No aa change		Present in	all samples tested		1
				Correct se	AGTAAAGAGGAACTAGACTTT	4								$\frac{1}{2}$

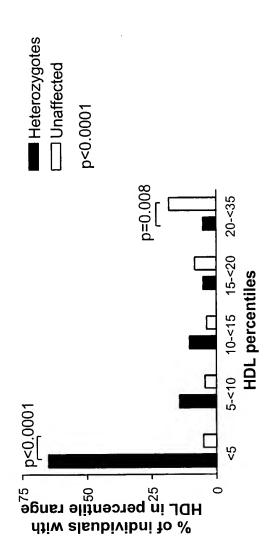


Figure 5B

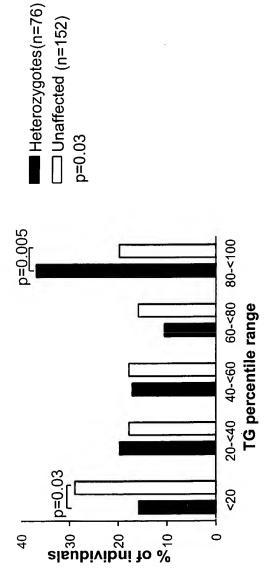


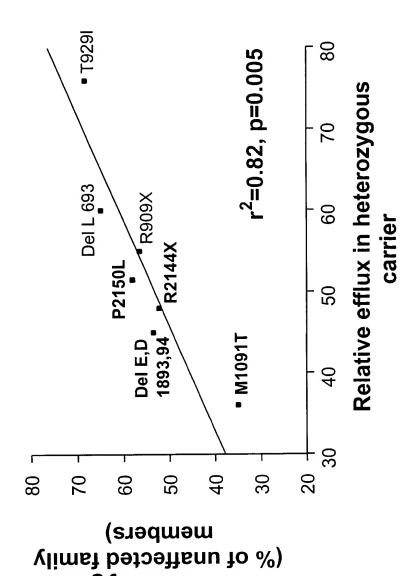
Figure 6

	TD Patients	Heterozygotes	Unaffected family	P-value	P-valu
	·		members	heterozygotes	TD patients
				vs. unaffected	vs. unaffected
number	5	77 <sup>A</sup>	156 <sup>A</sup>		
age (yrs) range	43.4 <u>+</u> 9.0 31-56	42.5 <u>+</u> 19.6 5-81	39.9 <u>+</u> 21.0 4-86	0.35	0.71
m/f	3/2	33/44	82/74	0.16	0.74
TC (mmol/L)	2.34 <u>+</u> 1.03	4.52 <u>+</u> 1.12	4.71 <u>+</u> 1.07	0.23	<0.0001
TG (mmol/L)	1.95 <u>+</u> 0.97	1.66 <u>+</u> 1.59	1.20 <u>+</u> 1.03	0.03	0.11
HDL (mmol/L)	0.08 <u>+</u> 0.05	0.74 <u>+</u> 0.24	1.31 <u>+</u> 0.35	<0.0001	<0.0001
LDL (mmol/L)	1.37 <u>+</u> 1.02	3.03 <u>+</u> 0.99	2.84 <u>+</u> 0.87	0.171	0.0003
ApoA-I (g/L)	0.03 <u>+</u> 0.04 (3)	0.92 <u>+</u> 0.32 (61)	1.43 <u>+</u> 0.26 (55)	<0.0001	<0.0001
ApoA-II (g/L)	0.10 <u>+</u> 0.08 (2)	0.35 <u>+</u> 0.08 (46)	0.39 <u>+</u> 0.08 (43)	0.01	<0.0001
ApoB (g/L)	0.89 <u>+</u> 0.53 (2)	0.93 <u>+</u> 0.25 (52)	0.94 <u>+</u> 0.33 (42)	0.88	0.84
CHD ≥ 20 yrs	20% (1/5)	12.9% (8/62)	4.1% (5/122)	0.03	0.10
Odds Ratio (95°	% CI)			3.47 (1.08-11.09)	5.85 (0.55-62.4)
Age of onset	38	48.9 <u>+</u> 8.6	60.4 <u>+</u> 12.8	0.08	

<sup>&</sup>lt;sup>A</sup> For TC, TG, LDL n=76 for heterozygotes, 153 for unaffected family members

Figure 7

Individual	Mutation	exon	disease (age of onset)				
TD proband							
TD1	C1477R, ivs24+1G>C	30, intron 24	CHD (38)				
ABC1 heter	rozygotes						
TD4-201	unidentified	-	MI (<58)				
FHA5-215	M1091T	22	MI (61)				
FHA5-303	M1091T	22	CHD (<45)				
TD1-363	C1477R	30	MI (51)				
FHA3-301	Del(E,D) 1893,94	41	PVD (<54)				
FHA3-305	Del(E,D) 1893,94	41	CHD (44)				
FHA6-201	P2150L	48	CVA (36), fatal MI (58)				
FHA2-301	R2144X	48	CAD (42), PTCA (47), femoral angioplasty (48), CABG (<50)				
Unaffected family members							
FHA5-212	none	-	AP (62)				
TD3-109	none	-	TIA (80)				
FHA2-315	none	-	MI (51)				
TD1-205	none	<del></del>	MI (62)				
TD1-216	none	-	AP (47)				



HDL in heterozygotes

Figure 9	mutation	HDL in	HDL in unaffected	HDL in	Age and sex matched	CAD in
		heterozygotes	family members	heterozygotes	population median <sup>A</sup>	heterozygotes
		mean ± SD (n)	mean ± SD (n)	% of unaffected	mean + SD	
FHA1	Del L 693	0.79±0.20 (8)	1.22±0.35 (11)	64.8	1.39±0.08	ı
FHA2	R2144X	0.56±0.23 (12)	1.07±0.22 (20)	52.3	1.34±0.19	+
FHA3	Del E,D 1893,94	0.77±0.24 (8)	1.44±0.38 (9)	53.5	1.30±0.17	+
FHA4	R909X	0.59±0.26 (5)	1.04+0.37 (9)	56.5	1.39±0.24	ı
FHA5	M1091T	0.48±0.48 (4)	1.37±0.43 (6)	35.0	1.56±0.05	+
FHA6	P2150L	0.61±0.07 (7)	1.05 (1)	58.1	$1.30\pm0.22$	+
TD1	ivs25+1G>C	0.78±0.06 (4)	1.35±0.29 (70)	57.8	1.22±0.22	,
TD4	del C 6825>2145X	0.91±0.10 (2)	1.00±0.05 (3)	91.0	1.31±0.16	ı
TD5	CTC6952-4TT>2203X	0.80±0.20 (3)	1.65 (1)	48.5	1.39±0.19	1
TD1	C1477R	0.82±0.18 (9)	1.35±0.29 (70)	2.09	1.37±0.14	+
TD2	Q597R	0.82±0.07 (5)	none available	·	1.39±0.17	,
TD3	T929I	1.01±0.18 (8)	1.48±0.42 (26)	68.2	1.33±0.19	•
TD4	unidentified	0.74±0.05 (2)	1.00+0.05 (3)	73.5	1.49+0.09	+

<sup>A</sup> Calculated based on mean the age and sex specific 50th percentile levels in the LRC population

Figure 10

	Missense	Severe	P-value	Unaffected	P-Value	P-value
	Mutations	Mutations	Missense vs.	Controls	Missense vs.	Severe vs.
	(n=33)_	(n=42) <sup>A</sup>	Severe	(n= 156)	unaffected	unaffected
TC (mmol/L)	4.78 <u>+</u> 1.30	4.30 <u>+</u> 0.95	0.08	4.71 <u>+</u> 1.07	0.76	0.02
TG (mmol/L)	1.77 <u>+</u> 2.15	1.55 <u>+</u> 1.01	0.58	1.20 <u>+</u> 1.03	0.14	0.06
HDL (mmol/L)	0.78 <u>+</u> 0.26	0.70 <u>+</u> 0.23	0.18	1.31 <u>+</u> 0.35	<0.0001	<0.0001
LDL (mmol/L)	3.19 <u>+</u> 1.10	2.90 <u>+</u> 0.91	0.23	2.84 <u>+</u> 0.87	0.10	0.73
LDL (mmol/L)	3.19 <u>+</u> 1.10	2.90 <u>+</u> 0.91	0.23	2.04 <u>+</u> 0.07	0.70	

 $<sup>^{\</sup>mathrm{A}}$  for TC, TG, LDL measurements, n=41 for severe mutations, 153 for unaffected

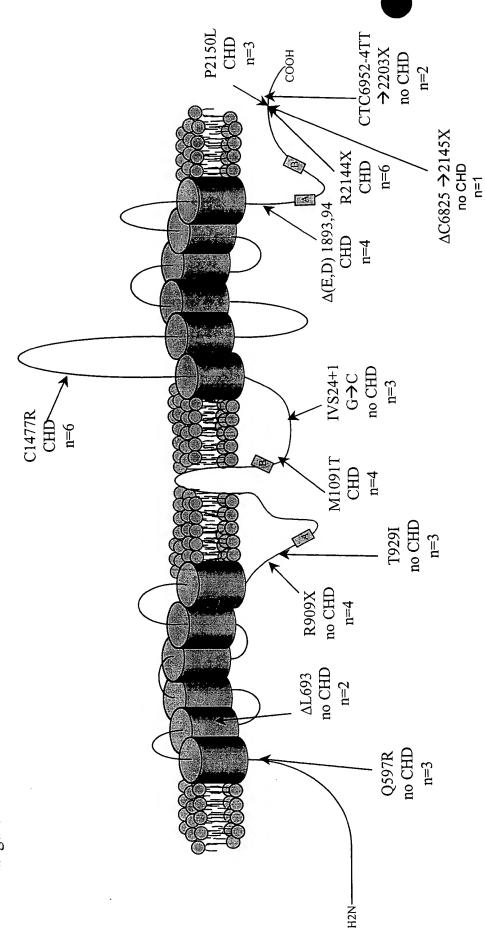


Figure 11



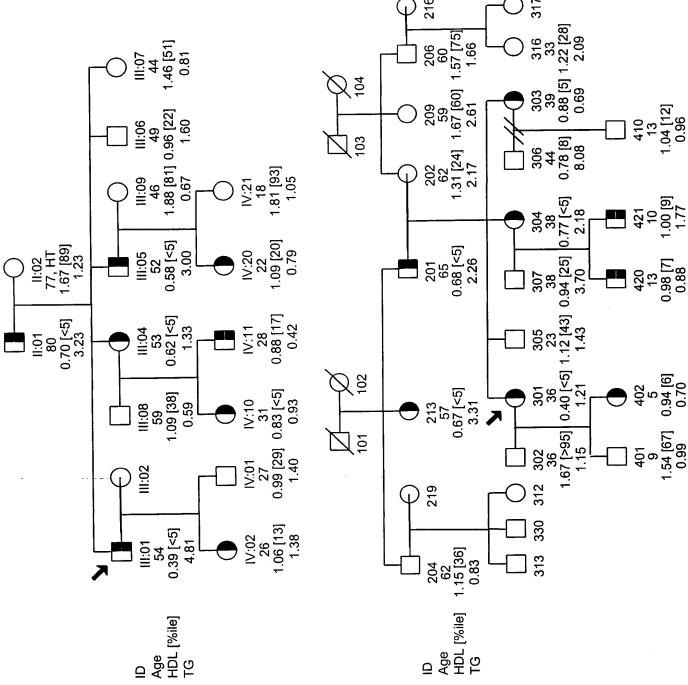


Figure 12B.

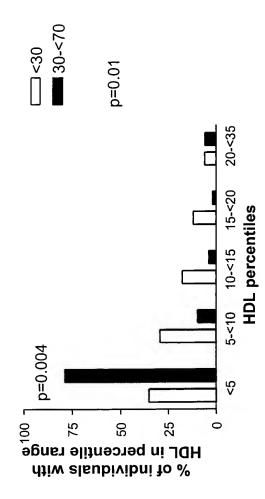


Figure 14

	Heterozygotes	Unaffected	P-value Heterozygotes
	mean <u>+</u> SD (n)	mean <u>+</u> SD (n)	vs. Unaffected
HDL (mmol/L)			
<30	0.91 <u>+</u> 0.16 (17)	1.26 <u>+</u> 0.29 (51)	<0.0001
. <u>&gt;</u> 30	0.66 <u>+</u> 0.24 (52)	1.32±0.36 (90)	<0.0001
Change	-0.25	+0.06	0.21
p-value <30 vs. ≥30	0.0002	0.23	
TG (mmol/L)			
<30	1.07 <u>+</u> 0.96 (16)	0.88 <u>+</u> 0.45 (51)	0.26
≥30	1.84 <u>+</u> 1.79 (52)	1.36 <u>+</u> 1.24 (87)	0.07
Change	+0.77	+0.48	0.97
p-value <30 vs. ≥30	0.03	0.001	

Figure 15A

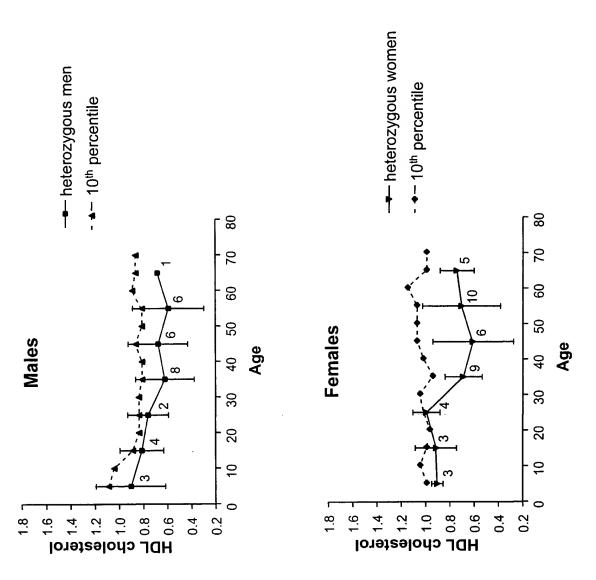
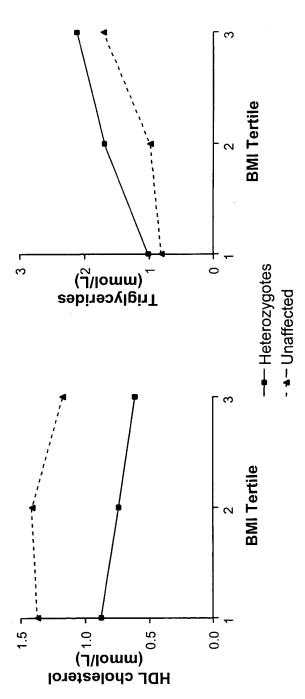


Figure 15B

Figure 16B

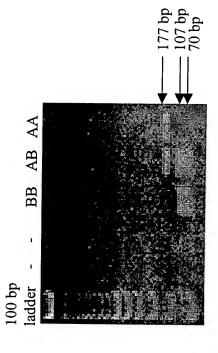


Variant	Amount of	Pmol	Forward oligo (5'>3') <sup>a</sup>	Annealing	Enzyme	Products (bp):	SEQ
	each dNTP (uM)	each <b>oligo</b>	Reverse oligo (5'>3')	temp. (C)	<b>,</b>	wt "A" allele variant "B" allele	0 °N No:
G1051A (R219K)	187.5	20	GTATTTTTGCAAGGCTACCAGTTACATTTGACAA GATTGGCTTCAGGATGTCCATGTTGGAA	09	EcoN	177 107,70	<b>211</b> 212
T1591C (V399A)	200	27.5	GCTGCTGTGATGGGGTATCT ACCTCACTCACACCTGGGAA	57	Hph I	117,103,48,33 220,48,33	213
G2706A (V771M)	200	27.5	CAAGTGAGTGCTTGGGATTG TGCTTTTATTCAGGGACTCCA	57	BsaA I	98, 252 <b>350</b>	215 <b>216</b>
A2715C (T774P)	200	27.5	GTGATCCCAGCGTGGTGTTTGTCTT GAAAGGCCAGAGGTACTCACAGCGAAGATCTTGAG <u>G</u> G	55	Hph I	56,69,95 56,161	217 218
G2723C (K776N)	187.5	12	TCGTTTTATTCAGGGACTCCA CAAGTGAGTGCTTGGGATTG	55	Bgl II	269,80 349	219 220
G2868A (V8251)	200	27.5	CCCATGCACTGCAGATTC GCAAATTCAAATTTCTCCAGG	57	Bsa l	149, 237 386	221 222
A3044G (I883M)	500	27.5	GAGAAGAGCCACCCTGGTTCCAACCAGAAGAG <u>G</u> AT AAGGCAGGAGACATCGCTT	55	EcoR V	94,35 129	223 224
G3911C (E1172C)	200	27.5	GAGCAGTTCTGATGCTGGCCTGGGCAGCGACCA <u>C</u> GA TCTGCACCTCTCCTCTG	55	BssS I	104, 37 141	225 226
G5155A (R1587K)	200	27.5	CAGCTTGGGAAGATTTATGACAGGACTGGACAC <u>G</u> A ATGCCCCTGCCAACTTAC	55	BssS	114, 31 145	227 <b>228</b>
C5587G (S1731C)	187.5	20	GTGCAATTACGTTGTCCCTGCCACACT CCATACAGCAAAAGTAGAAGGGCTAGCACA	09	Mnl	82,35 117	229 230
G(-191)C	187.5	24	CAGCGCTTCCCGCGCGTCTTAG CCACTCACTCTCGTCCGCAATTAC	09	Hgal	287, 55, 3 342, 3	233 234

C(-17)G	187.5	18	CTGCTGAGTGACTGAACTAAACAGAGGCCGGG <u>I</u> A CCACTCACTCGTCCGCAATTAC	09	Rsal	161 124, 37	<b>235</b> 236
C69T	187.5	24	CAGCGCTTCCCGCGCGTCTTAG CCACTCACTCTCGTCCGCAATTAC	09	BsmAl	345 310,35	237 238
C127G	187.5	24	CTGGCTTTCTGCTGAGTGAC GATCAAAGTCCCCGAAACC	09	co 0109	284, 175 459	239 240
A(-362)G	187.5	24	ACTCAGTTGTATAACCCACTGAAAAT <u>G</u> AGT TTCTATAGATGTTATCATCTGGG	55	Mbo II	224, 26 134, 90, 26	241 242
A(-461)C	187.5	20	ACTCAGTTGTATAACCCACTGAAAAT <u>G</u> AGT TTCTATAGATGTTATCATCTGGG	55	Hinf I	150, 100 123, 100, 27	243 244
G(-720)A	187.5	20	TCATCTAAGGCACGTTGTGG CCTCAAGCCTGGAGTGACTT	09	Hpa II	450 306, 144	245 246
G(-1027)A	187.5	20	ATGGCAAACAGTCCTCCAAG ACCCTAGCGCTGTGTCTCTG	09	Nco N	170, 41 105, 65, 41	247 248
A(-1095)G	187.5	20	ATGGCAAACAGTCCTCCAAG ACCCTAGCGCTGTCTCTG	09	MspA11	211 172, 39	249 250
insCCCT(-1163)	187.5	20	TGTGTGTCCTCCCTTCCATT CTTGGAGGACTGTTTGCCAT	09	Moll	144, 28, 11, 4 100, 48, 28, 11, 4	251 252
insG319	200	27.5	CCCCTCCTGCTTTATCTTTCAGTTAATGACCAGCC <u>C</u> CG ATCCCCAACTCAAAACCACA	55	Sma 1	246 210, 37	253 254
G378C	200	27.5	GCCGCTGCCTTCCAGGGCTCCCGAGCCACGCTG <u>c</u> G ATCCCCAACTCAAAACCACA	55	Aci I	108, 41, 33, 5 141, 41, 5	255

<sup>a</sup> Bold indicates mismatch in oligo to create restriction site

Figure 18



Nucleotide Amino Change Acid Change	4.	Exon	"B" allele	Frequency carrier alle (%) (B)	allele (B)	Ž.	Frequency carrier allel (%) (B)	allele (B)	z	Frequency carrier allel (%) (B)	allele (B)	z	Frequency carrier allel (%) (B)	allele (B)	z	Frequency carrier allele	allele (B)
symonymous G869A	none	9	<	62.5	riom sequenci 62.5 0.344		Date	ביותה אסו ויסוות	7	Datch	Dutch premature CAD	e n	Date	Dutcn control	_	French	French Canadian
C1331T	none	o	_	26.7	0.133	30					!						
G1343A	none	6	∢	26.7	0.133	30											
T3554G	none	22	ග	11.8	0.059	34											
C6842T	none	49	F	6.7	0.033	30											
Non-synonymous	snom			RE	REGRESS												
G1051A	R219K	7	∢	46.3	0.254	1588	39.9	0.227	546	44.1	0.247	826	47.5	0.249	989	48.9	0.287 94
T1591C	V399A	1	ပ	1.6	0.008	1098	1.2	900.0	164	<del>د</del> .	0.007	150	1.0		416	0	0 88
G2706A	V771M	16	⋖	5.8	0.029	1270	6.3	0.031	318	6.3	0.031	96/	3.9	0.020	406	12.8	0.064 94
A2715C	T774P	16	ပ	9.0	0.003	1250	1.3	900'0	154	1.3	900.0	156	9.0	0.003	326	14.6	0.073 82
G2723C	K776N	16	ပ	0.5	0.003	1106	0	0	178	9.0	0.003	360	1.9	0.00	318	0	0 88
G2868A	V825I	17	⋖	15.7	0.081	1364	•	•	ŀ	r	1	ı	ı				
A3044G	1883M	18	ල	23.8	0.136	840	19.7	0.102	264	45.9	0.262	122	26.8		314	25.0	0.125 88
G3911C	E1172D	24	ပ	5.3	0.026	1288	1.3	0.007	150	9.9	0.033	822	8.2		440	10.3	
G5155A	R1587K	35	∢	44.3	0.259	1566	46.1	0.271	542	50.0	0.302	808	51.1	0.285	446	46.7	0.278 90
C5587G	S1731C	38	ග	0	0	558	0	0	182	0	0	746	0	0	158	2.2	0.011 92

<sup>a</sup> N refers to the number of alleles screened.

Figure 20

R219K				-	- 4 alac	L-Value
1121311	Ą	AB	88	AA vs. AB	AA vs. BB	AA vs. AB+BB
c	424	330	36			
	2.70±0.37	2.77±0.37	2.78±0.40	0.01	0.22	0.005
MOD 1.	1.73±0.35	$1.81\pm0.35$	$1.85\pm0.35$	0.002	0.05	0.001
MI before trial %(n) 48	48.3 (205)	47.1 (155)	33.3 (12)	0.71	0.12	0.48
events during trial %(n)	17 (71)	13 (41)	11 (4)	0.10	0.49	0.09
total events <sup>a</sup> (%) 65	65.1 (276)	59.4 (196)	44.4 (16)	0.11	0.01 <sup>b</sup>	0.04°

<sup>&</sup>lt;sup>a</sup> Total events is calculated as the number of events/total number of individuals. Thus, the maximum value for this variable would be 200%, as individuals may have had events both before and during the trial.

<sup>&</sup>lt;sup>b</sup> Odds ratio for BB vs. AA=0.43, 95% confidence interval 0.22-0.85

<sup>&</sup>lt;sup>c</sup> Odds ratio for AB+BB vs. AA=0.74, 95% confidence interval 0.55-0.98

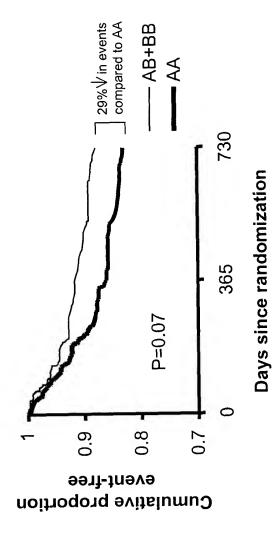


Figure 22

		AB	BB		P-value	
R219K	AA	AU	_	AA vs. AB	AA vs. BB	AA vs. AB+BB
n	424	330	36			
Age BMI	57 <u>+</u> 8 25.8 <u>+</u> 2.6	55 <u>+</u> 8 26.3 <u>+</u> 2.7	57 <u>+</u> 7 25.5 <u>+</u> 2.3	0.0007 0.01	1 0.50	<b>0.03</b> 0.09
Total Cholesterol HDL Cholesterol LDL Cholesterol Triglycerides	6.02±0.86 0.92±0.22 4.27±0.75 1.84±0.77	6.07±0.89 0.93±0.23 4.35±0.83 1.78±0.78	5.89±0.85 0.92±0.20 4.33±0.82 1.42±0.49	0.17	0.38 1 0.65 <b>0.001</b>	0.60 0.81 0.19 0.08

Figure 23

		< median mean±SD		> median mean <u>+</u> SD	P-value < vs. >median	P-value AB+BB vs. AA < median	P-value AB+BB vs. AA > median
AB+BB							
Total Cholesterol	193	$6.22\pm0.91$	172	5.87±0.82	0.0001	0.22	0.43
HDL cholesterol	192	$0.91\pm0.22$	171	$0.94\pm0.23$	0.21	0.12	0.37
LDL Cholesterol	192	4.49±0.84	171	$4.19\pm0.78$	0.0005	0.03	0.57
Triglycerides	193	$1.82\pm0.79$	172	1.65±0.72	0.03	0.02	0.85
MSD	193	2.79±0.37	171	2.75±0.37	0:30	0.18	0.01
MOD	193	1.83±0.36	171	1.78±0.34	0.18	0.09	900'0
АА							
Total Cholesterol		6.11±0.86	217	5.94±0.84	0.04		
HDL cholesterol	206	0.88±0.20	214	$0.96\pm0.24$	0.0002		
LDL Cholesterol		$4.32\pm0.77$	214	$4.23\pm0.72$	0.22		
Triglycerides		2.02±0.82	217	1.67±0.67	<0.0001		
MSD	205	2.75±0.36	217	$2.65\pm0.38$	0.006		
МОД	205	$1.77\pm0.34$	217	$1.69\pm0.35$	0.04		

Figure 24

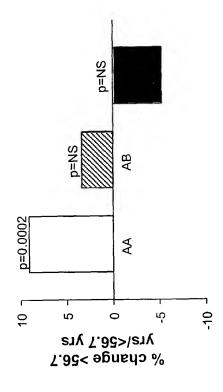


Figure 25A

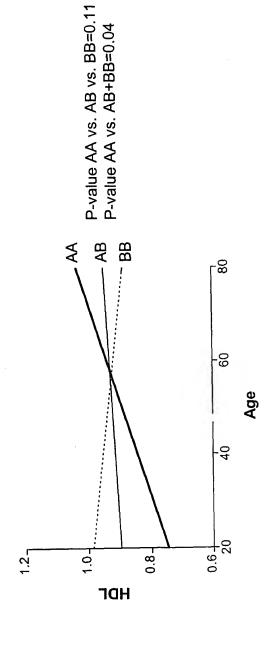


Figure 25B

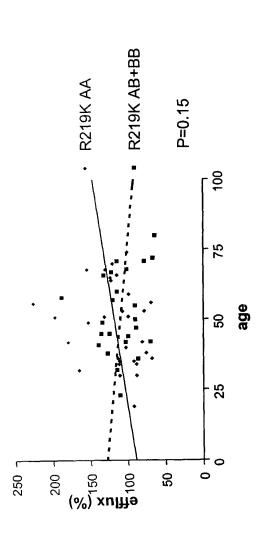


Figure 26A

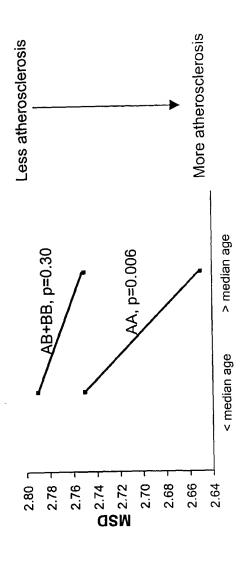
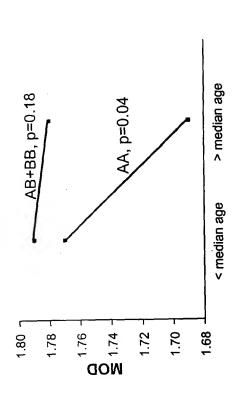


Figure 26A



	South African Black <sup>a</sup>	Cantonese	Dutch	P-value South African	P-value Cantonese
AA % (n)	13 (1)	32 7 (33)	52 5 (180)	vs. Duten	vs. Dutch
AB % (n)	50.7 (38)	55.4 (56)	45.2 (155)	<0.0001	<0.0001
BB % (n)	48.0 (36)	11.9 (12)	2.3 (8)		
c	75	101	343		
carrier freq.	98.67	67.33	47.52	<0.0001	0.0005
allele freq.	0.733	0.396	0.249	<0.0001	<0.0001

<sup>&</sup>lt;sup>a</sup> Not consistent with Hardy Weinberg equilibrium (p=0.01)
<sup>b</sup> Not consistent with Hardy-Weinberg equilibruim (p<0.001)